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TEACHER AND PUPIL: THE BROTHERS WILLIAM AND JOHN HUNTER FROM 1748 TO 1760 [1]

FENWICK BEEKMAN

The year 1748 was an eventful one for the anatomist William Hunter. First, because he visited the Continent during the summer, stopping at Paris and Leyden to study the methods used at these centers for teaching; and second, as his younger brother, John, came to join him from Scotland.

The elder Hunter was firmly established in London at this time as a teacher of anatomy, having given well attended lectures during the preceding two years. He gave two courses each year, one in the autumn and the other during the winter months, in his quarters on the Little Piazza, Covent Garden, where his dissecting room was situated. The fee for a course of lectures, covering three months, was four guineas. A lecture was held each weekday afternoon from five to seven-thirty o'clock; at other times, even on Sundays, the pupils attended the dissecting room, where each one investigated by dissection the structure of the human body (an innovation that William had introduced into England from the

[1] This is the fifth of a series of articles by the author on the formative years of William and John Hunter. The previous titles are: "Long Calderwood, the birthplace of the Hunters," *Bull. N. Y. Ac. Med.*, vol. 19, 2nd s., 1943, 849-865. "William Hunter's education at Glasgow," *Bull. Hist. Med.*, vol. 15, 1944, 284-297. "William Hunter's early education," *Jour. Hist. Med.*, vol. 5, 1950, 72-84, 178-196. "The self education of young John Hunter," *Jour. Hist. Med.*, vol. 6, 1951, 506-515.

Continent). The pupils were also taught the methods for injecting the blood vessels and other cavities of the body as well as the manner of fashioning preparations; arts in which William Hunter particularly excelled. William's assistant was John Simonds (d. 1788) of Exeter, a former pupil.

John arrived shortly after his brother's return from the Continent and a fortnight before the start of the autumn course of lectures. He was welcomed, it might be surmised, in a dubious manner, as William had not seen him since he had been a little fellow at Long Calderwood and much had transpired during the intervening eight years that would have disturbed even a less sensitive character than William Hunter. For there certainly was doubt in the elder brother's mind as to the lad's aptitude for a career in medicine or surgery, and William realized a choice had to be made between enrolling John as a pupil in his course or purchasing a commission for him in the army. It was well known that John had left grammar school prematurely, that he was headstrong and wilful and that the neighbors at East Kilbride said the boy was peculiar in his habits, being a dreamer and showing signs of stupidity and mental laziness. However, William did not have to worry for long in making a decision, as John at once demonstrated a remarkable ability for the work in the dissecting room by showing enthusiasm, industry, interest, and unusual understanding of that which was required of him. And it was not long before it was discovered that he possessed the outstanding qualities of healthy curiosity, wholesome skepticism and an almost unnatural power of observation, traits which marked him as having an intellectual capacity that was well above the average. Recognizing these assets, William determined to train and mould this receptive mind for a career in antomy or possibly surgery. In consequence, John was enrolled for the autumn course and given a number of special chores to do about the dissecting room, such as procuring and preparing bodies for dissection. It has been reported by an early biographer that John was a little wild, that he made companions of some of the dissipated youth of the town and hobnobbed with resurrection men, but the statement is not authoritative; and even if he had sown some wild oats, he soon discovered that there was little time for frivolity and began to give his entire time to serious pursuits. That he absorbed a large amount of anatomical knowledge during the first year is evident as William entrusted him at the end of this time with new responsibilities, appointing him prosector and assistant in the place of Simonds, who retired to Exeter, and even allowing him to read an occasional lecture.

The brothers moved in the autumn of 1749 from Mrs. James Douglas's house in Hatton Garden, where they had resided, to a recently purchased home on the Great Piazza. Here John was brought into close contact with the pupils who boarded with them, discussing the affairs of the day during the evening hours and debating over some anatomical question well into the night. Many lasting friendships were made in this manner with men from England, Scotland, Ireland, and the American Colonies; individuals of the caliber of Thomas Hamilton who became Professor of Anatomy at Glasgow; John Smith, later University Lecturer in Anatomy at Oxford; Charles White of Manchester who became a well known anatomical teacher and surgeon; George Cleghorn who served as Professor of Anatomy at Dublin; William Shippen, Jr. of Philadelphia, and John Jones of New York.

It was at about this time that William commenced to become interested in research related to morbid anatomy. Of this he writes in a late year:

> Beside the knowledge of our body, through all the variety of its structure and operations in a sound state, it is by anatomy only that we can arrive at the knowledge of the true nature of most of the diseases which afflict humanity. . .
>
> Were I to guess at the probable future improvements in physic, I should say, that they would arise from more general, and more accurate examination of disease after death.[2]

It was not at all uncommon to perform post mortem investigations in the dissecting room, the findings being reported to the pupils at a subsequent lecture.

John's education was not confined to anatomy, since he received every advantage to round out his knowledge in physic and surgery. He attended Chelsea Hospital during the summers of 1749 and 1750, where it is said he "learnt the first rudiments of surgery" from the famous William Cheselden, and St. Bartholomew's in 1751, to walk the wards with the rising young surgeon Percivall Pott.[3] Further instruction in clinical surgery was obtained, in 1754, from David Middleton at St. George's Hospital, and finally John served as house surgeon at this hospital in 1756, for a term of little more than four months. This full record of surgical instruction is cited so as to refute the malicious statement made by Jesse Foot, who writes:

> Upon the strictist enquiry, I have reason to be persuaded that this was all the surgical education [the time while serving as house surgeon] John Hunter ever

[2] Hunter, Wm., *Two introductory lectures*, London, 1784, pp. 72 and 73.

[3] It has been erroneously stated that John Hunter studied anatomy under both Cheselden and Pott.

received: and to my own knowledge I can speak it, that the period of five months duration at the hospital in the office of house-surgeon is the shortest which can be found in the unerring journals of hospitals.[4]

It may have been John's desire to return to the dissecting room and his research that prompted him in cutting short the period of service as house surgeon.

An event which undoubtedly influenced the course of John's intellectual career was his sojourn at Oxford during the summer of 1775, "to acquire," it is said, "the university manner so essential, from William's point of view, for a gentleman physician."[5] John entered St. Mary's Hall,[6] a part of Oriel College, as gentleman commoner, and remained in residence for less than two months. Writing in later years of this experience with irony, he says:

> They wanted to make an old woman of me; or that I should stuff Latin or Greek at the University; but these schemes I cracked like so many vermin as they came before me.[7]
>
> Jesse Foot accuses me of not understanding the dead Languages; but I could teach him that on the dead body which he never knew in any language dead or living.[8]

John Hunter is found defending his views concerning the approach to medical learning in these two statements. His convictions had been challenged by his being sent to the university to learn from books, when he knew that true knowledge of nature could only be acquired through gathering facts obtained by observation or investigation.

William received the degree of M. D. from Glasgow University, following a visit to Scotland in the summer of 1750, and was enrolled by The Faculty of Physicians and Surgeons of Glasgow as honorary member. He was appointed Master of Anatomy with Percivall Pott[9] at Surgeons' Hall in 1753, after having joined the Company in 1749.

The practical side of William's character is well shown in the following

[4] Foot, Jesse, *The life of John Hunter*, London, 1794, p. 75.

[5] Viets, Henry R., "A note on John Hunter at Oxford," *Boston Med. and Surg. Jour.*, vol. 182, 1920, 545-547.

[6] This choice presumedly was due to Dr. John Smith, who had attended Dr. Hunter's lectures in 1750 and again in 1754. He was at this time Vice-President of St. Mary's Hall and about to become University Lecturer in Anatomy.

[7] Ottley, Drewry, "The life of John Hunter, F. R. S.," *The works of John Hunter, F. S. R.*, London, 1835, vol. 1, p. 14.

[8] *Ibid.*, p. 22, f. n.

[9] A common mistake made by numerous biographers of the brothers is to give John credit for having received this appointment.

paragraph taken from a letter to Cullen in 1751. In respect to a request from his mother, who was dying from gastric cancer, to be allowed to see her Jockie; he wrote:

> But I cannot consent this season to her request, [that John be sent to Scotland] for my brother's sake for my own sake, and even for my mother's sake. It would be every way a bad scheme. I have wrote of it to her, and I hope that she will consider better of it, and find that it is really a whim begot of sickness and low spirits.[10]

Although denied a visit to Scotland to see his mother before she died, John was sent there the following summer, presumably to bring his sister, Dorothea, to London. It has been said, however, by some that he was granted this holiday because of failing health.

John had become, by the year 1756, a most valuable associate of his brother in teaching and research. It was at this time that William removed his residence and consulting room to Jermyn Street so as to separate his patients from the lecture and dissecting rooms, which were now transferred to the large house on the Great Piazza, where John and the pupils continued to live.

John's health began noticeably to fail from then on, and by 1760 "was so much impaired by excessive attention to his pursuits," says Everard Home, "that . . . he was advised to go abroad, having complaints in his breast which threatened to be consumption."[11] If he had had a tuberculous lesion at this time, as has been said, it must have been slight, since the findings at autopsy performed at the time of his death, thirty years later, were unimportant; little more than might be expected to have followed an early healed lesion.

Applying to the War Office, John received a commission as Surgeon on the Staff of the Army, which attached him to a hospital rather than to a regiment in the field. He sailed soon after with the military expedition which was being dispatched to capture Belleisle off the coast of France in the Bay of Biscay. It has been suggested by Peachey[12] that he convalesced, during the time between receiving his commission and his departure, at Earl's Court, where he later purchased property to build upon.

Aside from the routine work of the dissecting room, the brothers carried out considerable research during the twelve years they were

[10] Thomson, John, *An account of the life, lectures and writings of William Cullen, M.D.*, Edinburgh, 1859, vol. 1, p. 541.

[11] Home, Everard, "A short account of the life of the author," preface to *A treatise on the blood, inflammation and gun-shot wounds*, by John Hunter, London, 1794, p. xviii.

[12] Peachey, Geo. C., *A memoir of William and John Hunter*, Plymouth, 1924, p. 135.

associated. The most important problem and the one that engaged the greater part of their time was the study of the anatomy of the human gravid uterus. Although William had been formulating plans to prepare a folio volume of plates to illustrate this subject since the death of his patron, James Douglas, the occasion for accomplishing this did not present itself until the year 1751, when he "met with the first favorable opportunity of examining, in the human species, what before he had been studying in brutes." It was then that the body of a woman, who had died suddenly "when very near the end of her preganancy," was delivered to the dissecting room. The study of this subject became at once the brothers' foremost interest. "In the course of some months, the drawings of the first ten plates were finished, . . . ," [13] and these meeting with general approval, William issued an announcement in October 1752, notifying the public that subscriptions were open for the purchase of his forthcoming atlas, *The Anatomy of the Human Gravid Uterus.* Having obtained other suitable subjects for dissection, additional preparations were provided from which Jan Van Rymsdyke, an artist in William's employment of no mean ability, made drawings.

Robert Strange, later to be knighted for his ability as an engraver, was now consulted concerning the preparation of illustrations for this atlas. Van Rymsdyke, Strange, and one or two others who executed drawings for the brothers during these years are said by Choulant to have been "the foremost artists of England." [14] Though Van Rymsdyke executed thirty-one of the thirty-four drawings and engraved one of the plates for this handsome atlas of anatomical art, it was Strange, who engraved only two plates and these from Van Rymsdyke's drawing, whom William lauded in the "Preface" of his work.

William's recognition of his brother, John, for the assistance rendered in the preparation of this magnificient volume is short and to the point.

> If it be allowed that the author has spared neither labour, nor time, nor expense in improving an important part of anatomy, this is all the merit he can claim. In most of the dissections he was assisted by his brother, Mr. John Hunter, whose accuracy in anatomical research is so well known, that to omit this opportunity of thanking him for that assistance would be, in some measure, to disregard the reputation of the work itself.[15]

---

[13] Hunter, Wm., *The anatomy of the human gravid uterus,* London, 1851 (Sydenham Society Edition), p. iii.

[14] Choulant, Ludwig, *History and bibliography of anatomic illustration,* Chicago, 1920, p. 38.

[15] Hunter, Wm., *The anatomy of the human gravid uterus,* London, 1851, preface.

This acknowledgement appears to be generous, but John did not think that it by any means covered the most important aid contributed by him. He did not, however, at once protest this shortcoming on the part of his brother, but waited for six years after the publication of the atlas to make his claim and then did it in a most unfortunate and tactless manner. It was in the year 1774 that John sent a communication to the Royal Society "On the Structure of the Placenta," in which he charged his brother with having stolen the credit for the discovery of the circulation within the placenta from him. The details presented by him to substantiate the charge were that Dr. Colin MacKenzie, at that time Smellie's assistant, called upon him during May 1754 to explain the findings which he had observed when dissecting the uterus of a pregnant woman, the veins and arteries of the placenta having previously been injected respectively through the uterine vessels and those of the umbilical cord with solutions of different colors. After having completed a thorough dissection, John concluded that the foetal and the maternal circulations within the placenta are entirely separate and distinct. Continuing he reported:

> After having considered these appearances, it was not difficult for me to determine the real structure of the placenta and course of blood in these parts: . . . After having dissected the uterus, with the placenta and membranes, and made the whole into preparations, tending to show the above facts, I returned home in the evening, and communicating what I had discovered to my brother, Dr. Hunter, who at first treated it and me with goodhumoured raillery; but on going with me to Dr. MacKenzie's he was soon convinced of the fact. Some of the parts were given to him, which he afterwards showed at his lectures, and probably they still remain in his collection. . .
>
> The facts being now ascertained and universally acknowledged, I consider myself [MacKenzie having died] as having a just claim to the discovery of the structure of the placenta, and its communication with the uterus, together, with the use arising from such structure and communication, and of having first demonstrated the vascularity of the spongy chorion.[16]

Because of this charge made by John, an estrangement ensued between the brothers.

William, for the first time, demonstrated the epididymis and the seminiferous tubules of the testis at a public lecture in November, 1752, using a preparation in which mercury had been injected into the vas. However the specimen had not been opened as it was feared it might "spoil what was already a valuable preparation; . . ." But John was

[16] Hunter, John, "On the structure of the placenta," *The works of John Hunter, F. R. S.*, vol. 4, p. 62.

directed " to lose no opportunity of making the trial." This be successfully accomplished and William reported:

> He showed me the testis opened, and the tubular internal substance very generally filled with mercury. This preparation, . . . I showed at my public lecture that very evening, with marks of being pleased with the discovery. In my next course of lectures, viz. Feb. &c. 1753, and in every course since that time, I have shewn the same, and some other preparations of the same kind; and always gave the history of the discovery, to avoid taking that share of it from my brother which belonged to him.[17]

William had been teaching that the lymphatics were absorbent vessels from the time he first began to lecture. He, however, paid little attention to these structures until 1757, when his controversy with Alexander Monro, secundus, commenced. It was then that he made known his belief that they were independent vessels, communicating with neither arteries nor veins. He had reached this conclusion following some experiments performed by John of which he tells us:

> My brother found out, to the best of my recollection, in the year 1753, or 1754, that he could fill these glands uniformly, and the lymphatic vessels going from them, by pushing a pipe into their substance. . . . Having found out so easy a method, my brother then intended to have discovered or ascertained the structure, and, if possible, the use of the lymphatic glands; to have traced the lymphatic vessels all over the body, and to have given a complete description and figure of the whole absorbing system. This he proposed to accomplish, as his other employment should permit. . . . As he wished not to be anticipated, I treated the subject lightly at my lectures, . . . only mentioned his manner of filling the glands, and his opinion of the thoracic duct climbing so far as the upper cava. . . . Both these observations I made as from my brother . . . and when the hurry of dissection was pretty well over in the spring, my brother sat [sic] about a preparation, which he proposed as a basis for his intended description and figure of the absorbing system.[18]
>
> In the end of the winter, 1755-6, Mr. John Hunter made several injections of the lymphatic glands and veins with quicksilver; and in the month of May 1756, Mr. Riemsdyk finished a fine drawing of them, with the receptacle and duct (from a preparation the doctor still preserves) in presence of many pupils and occasional visitants.[19]

There are numerous handsome preparations of the lymphatics, injected with mercury, to be seen today in the Hunterian Anatomical Museum at Glasgow, but this particular one has not been identified.

A question brought to the attention of the brothers during the later time (1758) of their association concerned the part played by the veins as

[17] Hunter, Wm., *Medical commentaries*, London, 1762, p. 1.
[18] *Ibid.*, p. 34.
[19] *Ibid.*, p. 93.

absorbents. They suspected, as a result of their investigations on the functions of the lymphatics, that these were the only absorbents in the body. But wishing to be positive in their opinion, they decided that John should investigate further.

> At this time [William writes] my brother was deeply engaged in physiological enquiries, in making experiments on living animals, and in prosecuting comparative anatomy, with great accuracy and application. It is well known that I speak of him with moderation, when I say so. He took the subject of absorption into his consideration, and from his observations, was inclined to believe, that in the human body there was one, and but one system of vessels for absorption. . . .[20]

John used five animals in these experiments (a dog, three sheep, and an ass) performing nineteen operations in all. William announced the conclusions drawn from these experiments in these words: "Here is a new doctrine proposed in physiology, viz. that red veins do not absorb in the human body." Of course we know today that this is erroneous.

During the winter months of 1755-56 John was busily engaged investigating the steps and anomalies in the descent of the testis. William had given his brother this task, after having been asked by his friend, Samuel Sharp, Surgeon to Guy's Hospital, as to whether he "had ever found the intestine in the same bag, and in contact with the testis." A few months later William, while dissecting a cadaver with bilateral inguinal hernia, found the condition as described by Sharp to exist on the right side, while on the left the testis lay within its tunica vaginalis separated from the hernial sac. Sharp, who was present at the time, explained the anomaly existing on the right side as the result of a rupture of a simple sac extending through the tunica vaginalis so that its contents lay in contact with the testis. This explanation, however, failed to satisfy William, and having read Albrecht von Haller's article on the hernia congenita in the latter's *Opuscula Pathologica*, during the early months of the year 1755, he called upon his brother to explain congenital hernia.

John made a number of fine dissections of foetuses and stillborn infants, some of which can be seen today in Glasgow, to demonstrate the succeeding phases in the descent of the testis. A number of drawings of these preparations were made by Van Rymsdyke, three of which were reproduced to illustrate the article, "Obervations on the State of the Testis in the Foetus, and on the Hernia Congenita," which appeared in his brother's *Medical Commentaries*. This essay was later issued, with a number of corrections and additions, as "A Description of the Situation of the Testis

[20] *Ibid.*, p. 42.

in the Foetus, with Its Descent into the Scrotum," in John's *Observations on Certain Parts of the Animal Oeconomy.*

The investigation of this embryonal phenomenon was thorough; the dissections were skillfully prepared, the observations minute and exact, and the conclusions arrived at in a logical manner. With the exception of a few additional facts that have but recently come to light, this work of John Hunter remains authoritative.

On looking through volume one of the *Medical Observations and Inquiries by a Society of Physicians in London* [21] we see that William became interested, during the year 1756, in the subject of aneurism, particularly its morbid anatomy. Under the title of "The History of an Aneurism of the Aorta, with Some Remarks on Aneurisms in General," we find him reporting the case of a 39 year old man, who had died in 1752, the diagnosis having been made three years earlier when rupture had been predicted. This had occurred under dramatic circumstances. The progress of the condition during the intervening years had been accurately noted as well as the findings observed at autopsy. Not only is the aneurismal sac with its contained laminated clot described, but also the erosion of the bones with which it had come in contact. There would seem to be no doubt that John took an active part in this autopsy as well as in dissecting and mounting the pathological specimens, from which Van Rymsdyke executed drawings to be used as the illustrations accompanying the communication. This communication concludes with an account of the various forms of aneurisms, giving their symptoms, morbid anatomy, and treatment.

In this report, William mentions the "arterial varix" or arteriovenous aneurism, the first recognition of which has been credited to him. "Does it ever happen in surgery," he asks, "when an artery is opened through a vein [which happened on occasions during blood letting] that a communication or anastomosis, is afterwards kept between the vessels?" He had seen a young woman, in whom he suspected such an injury, and had followed this patient, seeing her at frequent intervals, and having heard from her a short time before by letter, in which she wrote: "You know Mr. Hunter's advice to me was, not to do anything to it; which I have satisfied myself with, and have never attempted anything." From this it seems evident that John saw William's patients at times, perhaps acting as his associate.

Another communication made to the Society of Physicians in London

[21] *Med. obser. and inq.*, London, 1757, vol. 1, p. 323.

was "The History of an [Interstitial] Emphysema,"[22] in 1757. This remarkable discussion was opened by William with the presentation of a case history. A young man had been seen on July 13th, 1754, shortly after being thrown from a horse, and "having received a considerable hurt to his side, . . ." was found to be suffering from a diffuse emphysema of the subcutaneous connective tissues, which endangered his life. This was successfully dealt with by making multiple punctures through the skin. "Remarks on the Cellular Membrane, and some of Its Diseases," a subheading, reviews information which had been collected through investigations carried on by William and probably with the assistance of his brother. Here, the anatomy and the pathology of the interstitial connective tissues and the skin are discussed in detail, bearing evidence of intelligent research. The phases of wound healing are mentioned, as well as the different forms of inflammation and the treatment of abscess and empyema. These subjects were to be of great moment to John during later years, while engaged in gathering together material for his magnum opus, *A Treatise on the Blood, Inflammation and Gun-shot Wounds*. Ovarian cyst is also brought into the discussion, under a subheading of "Encysted Dropsy of the Ovarium." No description can do full justice to the knowledge contained in these pages, knowledge that may well be said to have been far ahead of its time.

"An Account of a Diseased Tibia," with a fine illustration by Van Rymsdyke, was reported to the Society by William, on April 20th, 1761.[23] The condition was, as it appears in the illustration, osteomyelitis with a sequestrum of the shaft surrounded by an involucrum.

Although John gave most of his time to assisting his brother by carrying out investigations laid out for him, he nevertheless found moments to do some research of his own.

The following statement appears in the "Advertisement" of John's first work, *The Natural History of the Human Teeth*:

> Most of the observations contained in the following treatise were made by the author before the year 1755; and the substance of them constantly demonstrated after that period, in Dr. Hunter's course of anatomical lectures. The figures were drawn by Mr. Rymsdyk, under the author's direction, and engraved by Mess. Strange, Grignion, Ryland, and others.

The Hunterian Museum in Glasgow contains a number of preparations, identified by Teacher, as having been made by John.[24]

[22] *Ibid.*, 1762, vol. 2, p. 17.
[23] *Ibid.*, p. 303.
[24] Teacher, John H., *Catalogue of anatomical and pathological preparations of Dr. William Hunter*, Glasgow, 1900, vol. 2, p. 397.

John Hunter's *Observations on Certain Parts of the Animal Oeconomy* contains among the many essays "A Description of the Nerves Which Supply the Organ of Smelling" and "A Description of Some Branches of the Fifth Pair of Nerves."

> In the summer of 1754, being much employed in dissecting the nerves passing out of the skull, I was, of course, led to trace many of their connections with those from the medulla spinalis; and was assisted by Dr. Smith, then pursuing his studies in London. . . . I dissected the first pair of nerves, and discovered their distribution; and having made a preparation of the parts in which they were found, I immediately had drawings made from them. . . . Engravings were afterwards made from these drawings, and the preparation was repeatedly shown by Dr. Hunter, in his course of anatomy.[25]

"A Description of Some Branches of the Fifth Pair of Nerves" was compiled from observations gathered while John was dissecting out the olfactory nerves. It has been said that this work anticipated the discoveries of Sir Charles Bell.

The research leading up to the communication made to the Royal Society under date of February 27th, 1774, on "An Account of certain Receptacles of Air in Birds, which communicate with the Lungs and Eustachian Tube" was conceived and commenced while John was still associated with his brother.

> These facts which had been formerly observed [he writes in this essay], led me in the year 1758 to make several experiments upon the breathing of birds, that might prove the free communication between the lungs and the before mentioned parts [air cells in the bones etc.].[26]

That the preliminary work for his magnum opus, on the *Blood,* was laid down during these early years is comfirmed by the opening paragraph:

> The following pages treating of inflammation, were first arranged in the year 1762, at Belleisle, after the complete reduction of that place. They were compiled from notes and memorandums of observations made in the course of twelve years' residence in London. During this space my time was occupied in my education under the late Dr. Hunter, and partly in assisting him.[27]

The earliest investigations leading up to John's essay on "Observations on the Glands Situated Between the Rectum and Bladder, Called Vesiculae Seminales," appearing in the *Animal Oeconomy,* were done in his brother's dissecting room. There is evidence of this to be found in the essay: "In dissecting a male subject, in the year 1755, for a side view

[25] Hunter, John, *Works,* vol. 4, p. 189.
[26] *Ibid.,* p. 181.
[27] *Ibid.,* vol. 3, p. 1.

of the contents of the pelvis, I found a bag on the left side . . ." [28] And again he writes: "In April 1760, in the presence of Mr. Blount, I laid bare the penis of a dog, . . ." [29]

It was during the period of the association of the brothers that John's interest turned to embryology, and he commenced some investigations concerning the development of the chick within the egg. This he tells of while discussing the "living principle," in *A Treatise on the Blood*:

> I had long suspected that the principle of life was not wholly confined to animals. . . . I conceived that the same principle existed in animal substances devoid of apparent organization and motion, where there existed simply the power of preservation.
>
> I was led to this notion about the year 1755 or 1756, when I was making drawings of the growth of the chick in the process of incubation.[30]

He observed that the egg under incubation, in which a chick was developing, continued to be sweet to the taste, but one that was sterile became putrid.

The subject of resuscitation of persons apparently drowned first came to his attention at about this same time. He presented a communication, "Proposals for the Recovery of Persons Apparently Drowned," [31] before the Royal Society on March 21st, 1776, in which the following statement is found: "To put this in a still clearer light, I will give the results of some experiments which I made in the year 1755 upon a dog."

"An Account of the Organs of Hearing in Fish," a communication made to the Royal Society on November 14th, 1782, contains the following information:

> Some time before I quitted my anatomical pursuits, in the year 1760, and went with the army to Belleisle, I discovered this organ in fishes, and had the parts exposed and preserved in spirits. In some the canals were filled with coloured injection, which showed them to great advantage, and in others were so prepared as to fit them to be kept as dried preparations.[32]

Following a description of the anatomy of the organs, John tells of the experiment that was made in the year 1762, when he was in Portugal, of firing a gun near a fish-pond in a nobleman's garden and observing the fish vanishing in a cloud of mud on the bottom.

John Hunter's aversion to seeking knowledge from books, occasionally resulted in his advancing claims to discoveries that others had already

[28] *Ibid.*, vol. 4, p. 23.
[29] *Ibid.*, p. 32, f. n.
[30] *Ibid.*, vol. 3, p. 106.
[31] *Ibid.*, vol. 4, p. 165.
[32] *Ibid.*, p. 293.

reported. Sir Richard Owen draws particular attention to two instances of this: the essay concerning the function of the seminal vesicles and the determination of the organ of hearing in fish.

> The true originators of these and other ideas and facts which Hunter may have regarded as his discoveries, and which he doubtless did discover so far as independent and original research constitutes a claim to that honour, I have been careful to point out in every case where my reading has led me to detect in an older author a clear anticipation of Hunter.[33]

In conclusion, it may be asked whether a country boy who had had little formal schooling could become, within a trifle more than a year after being transplanted to the environment of a dissecting room, so able an investigator? The answer to this is to be found on the preceding pages. Having intensely schooled himself, during his youth, as a student of nature through observing his surroundings in the country, he was well prepared for the further study of the biological sciences. And possessing a receptive mind, uncontaminated with knowledge of the written word from books, and a remarkable intellectual capacity, all that was now required was that he be placed under a master who was capable of guiding and encouraging him in his quest for knowledge. This John Hunter was fortunate to find in his brother, who proved to be most suitable in these respects, as besides training in the newer scientific methods, intellectual ability and understanding, he "prossessed in a remarkable degree the power of inspiring others with his own enthusiasm. . . ."[34] William Hunter must be given, in consequence, the full credit for having trained and inspired his brother on the outset of a remarkable career as a natural biologist, physiologist, and surgeon.

[33] *Ibid.*, p. iv.
[34] Teacher, John, *loc. cit.*, p. xxxiii.

HOMINES AD DEOS:

OR

THE CLINICAL BULL IN THE ECOLOGICAL CHINA SHOP *

IAGO GALDSTON

None, I am certain, will be misled by the cavalier overtones of my title, but will rather assume that I am very much in earnest. That indeed I am. I elected this title not only because it is novel, and arresting, but also because it precisely epitomizes my thesis.

This confessedly covers a wide terrain, and I shan't for a moment pretend that I can cover it any better than the cartographer who, by overlooking many details, can map a continent on a sheet. But since my primary aim is orientation, or rather since the burden of my contention is that we are disoriented in our comprehensions of the relations of medicine to society, I am willing to overlook the trees to better render the woods.

Our common theme is—Curative Medicine and its impact upon society. There can be little question as to what we intend by society. But unless we precisely define what we mean by Curative Medicine, much misunderstanding is certain to result. For it may be properly asked—Isn't all medicine curative? Was there ever a physician worthy of his calling who did not try and hope to cure his patients? Still, medicine did not always pretend to be "curative." In former ages the claims of medicine were more modest. This is well reflected in the Hippocratic dictum—*Natura salvat, medicus curat.* The cure came from Nature, the care from the physician. These humble pretensions are similarly mirrored in the saying attributed to Ambroise Paré (1510-1590)—*Je le pansay, Dieu le guarit.* The cure, be it noted, is now credited to God rather than to Nature.

The question thus arises—when then *did* medicine become avowedly curative? It is not possible to answer this question definitely. It is not possible to point to a specific time when medicine became curative. For the "becoming" had been a long drawn out process. Yet one *can* "date" its initiation. It began at the time when, to use the phrase so dear to the historians of science, man ceased to regard the universe as a *closed system.* It was when Dante's vision of heaven and hell was displaced by the

* Read at the twenty-seventh annual meeting of the American Association of the History of Medicine, New Haven, Connecticut, May 8, 1954.

heliocentric astronomy of Copernicus. It was during the time of the Renaissance, and of the Reformation. It was, to narrow it down to our immediate realm, in the days of Paracelsus. For paradoxical though it may seem, Paracelsus must be counted among the initiators of Curative Medicine. Is it not said of him, that he burnt the works of Galen and Avicenna!

Paracelsus was the first among the modern nosographers; a specificist in diagnoses, and a specificist also in therapy. But Paracelsus was a quintessential paradox! He burnt Galen, yet he revered Hippocrates. He was a specificist in diagnoses and in therapy, yet he was preoccupied with the reciprocal influences of microcosm and macrocosm. Sydenham was in these respects quite like Paracelsus.

Having designated the time when medicine took on the "curative" bias, we can now turn to an analysis of the nature of this bias. Curative Medicine is founded on the presumptions of a definitive nosography and of specific therapy. These are its positive characteristics. It also has an important and distinguishing negative feature—it is non-ecological. It posits man in an open, rather than in a closed relation to the universe. This, may I submit, is a something which our modern histories of medicine neither comprehend nor expound. Yet interestingly enough, the apposition of ecological to curative medicine is not novel to our times. It appeared first some twenty-one hundred years ago, and is witnessed in the conflict between the school of Hippocrates and that of Asclepiades. The latter is referred to as the Methodist or pragmatist school. Even some of the polemics of the ancient time have a modern ring: Asclepiades referred to Hippocratism as a *thanatou meletē*, a *meditatio mortis*.

The time available does not permit me to offer a detailed recitation of the development of the curative bias of modern medicine. Those who would trace it from the time of Hippocrates must have an eye to the periodic and sporadic attempts to formulate a definitive nosography and to establish specificity in etiology and in therapy. None of the efforts, however, was in any way successful, until the eighteenth century. Then Methodism was revived and flourished. For, in effect, Curative Medicine is but Methodism in modern dress.

The early gropings of the modern Methodists were pathetic. The system of Themison, of *strictum*, *laxum*, and *mixtum*, was revived and elaborated by the learned, and ingenious, Hermann Boerhaave (1668-1738), Giorgio Baglivi (1668-1706), and Friedrich Hoffmann (1660-1742), and by the equally ingenious, though perhaps less learned Wm. Cullen (1712-1790), John Brown (1735-1788), and F. J. V. Broussais (1772-1838).

It is easy to make sport of the eighteenth century Asclepiadeans, and Fielding H. Garrison (1870-1935) makes a Roman holiday of it.[1] They were in effect, however, but the logical exploiters of the *Scientia Nuova*. They drew their inspiration less from Asclepiades and from Themison, than from William Harvey (1578-1657) and Robert Boyle (1627-1691), from the iatrochemists and the physiatrists. Furthermore, they were, and this is important, the blood and elder brothers of the nineteenth century scientists, the founders of what is termed modern medicine. For be it noted, in the strictly academic sense, there is very little difference between the hypothesis that disease is caused by "spasm and atonus," by "sthenia and asthenia," or by "irritation," and the hypothesis that disease is caused by "germs," though germs, of course, are more convincingly demonstrable. By this I do not intend to affirm that all hypotheses are of equal value and equally tenable. I mean only that the hypothesis of Cullen, Brown, Broussais, and those of Louis Pasteur (1822-1895), Robert Koch (1843-1910), and Emil von Behring (1854-1917), have one, very significant, thing in common: Each of them postulates the operation of specific, that is, unique causes of disease, and each disregards or denies the influence of and the importance of ecological factors. The fundamental bias of Curative Medicine thus is as well represented in Brunonianism as in the germ theory of disease.

This brings us aplomb of a rather interesting inquiry. How does medical history picture the relation of the eighteenth century Asclepiadeans to the nineteenth century founders of modern medicine? Garrison characterizes eighteenth century medicine as "dull and sober sided" (p. 315, 3rd ed.). He pictures "the great theorists of the time, as Emerson has described the Gods, each sitting apart in his own sphere, beckoning up to their theories" (p. 315). Arturo Castiglioni, in a far more cosmopolitan perspective, damns the age with equivocal adjectives and wry praise. This century, he writes, attests to the fact that "In history, the study of errors is no less instructive than the study of successes" (p. 582).

The eighteenth century, and it can be added the first half of the nineteenth century, are commonly represented as a period during which

[1] This and the subsequent reference to Garrison and the citations from his *History of Medicine* are likely to give the impression that I am severely critical and even disparaging of his work and scholarship. This I wish to disavow most emphatically. On the contrary, I have a deep respect both for the man and his accomplishments. He was for long a "lone pioneer" in the cultivation of the study of medical history in America, and many like myself cut their scholastic eye teeth on the text of his *History*. His *History*, however, is in the instances cited precisely exemplary of the points I seek to make on the lack of ecological orientation in medical history, as currently represented.

medicine groped blindly and in the main with little or no profit. Modern medicine is pictured as less beholden to the antecedent century than to the fortuitous genius of those men who created the science of pathological anatomy, and who advanced the science of diagnoses. Counted among the *primary* men of genius are Marie François Xavier Bichat (1771-1802). René Théophile Hyacinthe Laennec (1781-1826), Leopold Auenbrugger 1722-1809), and P. C. A. Louis (1787-1872). A secondary galaxy embraces Claude Bernard (1813-1878), François Magendie (1783-1855). Johannes Müller (1801-1858), Rudolf Virchow (1821-1902), and Jacob Henle (1809-1885). But the crowning achievements of modern medicine are summated in the works of Pasteur, Joseph Lister (1827-1912), Koch. von Behring, and Ehrlich (1854-1915).

The story is that the eighteenth century scientists theorized and got nowhere. Then about the middle of the nineteenth century, the scientists so to say "got the hang of things,"—they stopped speculating, and got down to researching. Garrison phrases it thus: "It took a long time to demonstrate that the advancement of internal medicine as a science can never be accomplished by hugging some pet theory out of a regard for its author's personality, but only through the performance of a vast amount of chemical, physical, and biological research by thousands of willing workers" (p. 426, 3rd ed.).

This representation, I submit, is fictional in many respects. It is an artifact of the medical historian's thinking and a creation of his prejudices. The eighteenth and the nineteenth centuries are not as they are commonly represented, discontinuous in respect to medical research. Nor was the development of modern medicine as logically consistent as it is pictured by the historians. The smoothness of the pattern that charts its development is achieved by the rejection of those factors which do not "fit in." I'll name a few of these overlooked items. There is the monumental work of M. von Pettenkofer (1818-1901) which still remains to be fully assessed. There are the many Anticontagionists, who generally are dismissed as reactionary, when not as ignorant old fogies. There is the Nature-Philosophy School, and also the Romantic School, which enlisted the partisanship of such fine intellects as those of Karl August Wunderlich (1815-1877), K. Roser (1856-1905), Josef Skoda (1805-1881), Wilhelm Griesinger (1817-1868) and Henle. There is the wave of Therapeutic Nihilism and the pall of therapeutic despair which, arising in Vienna, swept over most of Europe, and America.[2]

[2] The therapeutic despair is reflected in Oliver Wendell Holmes' famous dictum: "If all the drugs in the Pharmacopeia were thrown into the sea, it would be all the better

All these are commonly presented as if they were mere side shows to the main circus. Garrison, for example, would have us believe that the Romantic School came into being because the Napoleonic wars caused the best minds in Germany to indulge in various idealistic modes of thought, a fermentation which, so he affirms, came to a head in the Revolution of 1848. This revolution, according to Garrison, "dissipated the silly doctrines of the Nature-Philosophy School into space, but the New Vienna School died hard, . . . and Rokitansky had to be overthrown by Virchow, and Semmelweis had to sacrifice his life in proving his thesis before German medicine could finally emerge from the Happy Valley of speculation to gain the table land of reality" (p. 450, 3rd ed.).

This account cannot be taken in earnest. Much more reasonable is the presumption that the eighteenth century Methodism disrupted the physician's ancient orientation, deprived him of his familiar armamentarium, and gave him little in their stead, but only the *promise* of a new science.[3] Disorientated and impoverished, the physician could not effectively serve his sick patient seeking help in the "here and now."

I have cited several historical entities which, so to say, are extraneous to the tale of the smooth rise of modern medicine. They appear like a miscellany of items, but there is a something common to them all—to Pettenkofer, the Anticontagionists, and the Romantic School and Therapeutic Nihilism. That which is common to them all is their ecological

for mankind and all the worse for the fishes," and more amply in V. Veresaeff's *The Confessions of a Physician* (chapter XIII, pp. 186, 187): "It took me a long time for my mental focus to adjust itself to view the powers vested in medicine in their true proportions and to recognise the limitations of the latter. When in the presence of a patient to whom I was powerless to give relief, I used to feel distressed and ashamed; standing before me, sullen and despairing, he was a living incarnation of heavy reproach to that science which I represented. And again and again maledictions would rise up in my breast at the impotence of this science. '. . . Was hab'ich . . . Wenn ich nicht alles habe.' . . . 'Out of all my work, my lectures alone interest me and retain their life,' wrote Botkin [one of Russia's greatest physicians of the latter half of the last century] to his friend Dr. Belogolovy. 'The rest I drag along as a man on the towing path drags his rope, prescribing a mass of superfluous medicines. This is no empty phrase, and will help you to understand why my practical work in my *polyclinique* oppresses me so. Having a tremendous number of chronic cases under my observation, I have begun to realize with sadness how impotent our therapeutic remedies are. Hardly a *polyclinique* passes without the bitter reflection: "why had I taken money from half of the patients and put them to the further expense of buying one or other of our pharmaceutical remedies, which, after affording relief for four and twenty hours, would work no appreciable change in their condition?" Forgive me for this hypochondria, but this was my day for private consultations, and I am under the fresh impression of my fruitless work.'"

[3] Jul. Petersen, *Hauptmomente in der geschichtlichen Entwickelung der medicinischen Therapie*, Kopenhagen, And. Fred Höst & Sohn, 1877, is an instructive work bearing on this theme.

orientation. Pettenkofer was profoundly and preeminently an ecologist. The Anticontagionists were not so insistent on denying the existence of contagia, as in insisting that the contagia were not the primary and sole agent of disease. The Romantic School, subscribing to the belief that Nature cures, and that the physician can only operate as Nature's servant and helper, was deeply engrossed, and much involved in the study of the nature of disease, and that of the remedy. Therapeutic Nihilism did not paralyze the physician but restrained him rather from prescribing and administering those overwhelming medicaments favored by Magendie and his followers.[4]

It is indeed rather significant that the Nature-Philosophy and Romantic School movements receive such scant and such disparaging treatment in the medical historical texts. One has the feeling that the medical historians are uneasy in the presence of these troubling actualities, and in their uneasiness seek to dispose of them quickly. Failing to grasp the true significance of these movements they discount them as the aberrations of feverish, or exhausted, intellects. Most of all, writing in the days when the triumphs of Curative Medicine overshadowed all that came before, they find it impossible to reconcile the speculative excursions of the Romantic School with the solid progression of modern science, which in their pat scheme began with Vesalius and grew effulgent in the achievements of the bacteriologists.

The sober fact, however, is that the Romantic School came into being for good and sufficient reasons, and the problems with which it dealt remain valid and unresolved. Curative Medicine has not rendered them nugatory, has not proven them illusory, or negligible.[5]

In the middle of the last century Curative Medicine, which had been in the making for close to three hundred years, came near to bankruptcy. It was in effect saved by, and glorified in, the achievements of Pasteur, Koch, Lister, and von Behring. It was not the Revolution of 1848 that overwhelmed the Vienna School, but rather the unquestionable demonstration of the pathogenicity of bacteria, and of the effectiveness of antisepsis, asepsis, vaccines, and antitoxic sera. Curative Medicine thus not only came of age, but dominated the whole of medicine. Specificity in nosology, in etiology, and in therapy was triumphantly demonstrated. Hippocrates

[4] And while on the subject of therapeutic nihilism, it is proper to observe that present-day physical therapy, with its exercise, massage, heliotherapy, balneotherapy, occupational therapy, etc., drew its inspiration and derived its impetus from the Romantic School.

[5] Vide A. E. Clark-Kennedy, "The Nature of Disease," in *Brit. Med. J.*, p. 473, Feb. 27, 1954.

was dethroned and Asclepiades triumphed. Ecology was a science discounted and discarded. "For we are of the opinion," wrote von Behring, "that in combating disease we can achieve more by attacking the causes of disease [that is the noxious agents such as living organisms and their toxins] than by an attack on the living cells and organs."

In the light of such a deep persuasion, how vain and futile it must have seemed to pursue such philosophical queries as "the nature of disease," or the "essence of the cure." To von Behring, as to his professional descendants, it *was* all folly—a phantasmagoria. It is true, as Major Greenwood wrote, "some of the leaders of the victorious bacteriological army, including Koch himself, warned us that the discovery of parasites and the elucidation of their life histories left much of the mechanism of herd illness unexplained, but some of the commissioned officers and all the camp followers of the army would know nothing of this caution. It came to be believed by a majority that epidemiology from the scientific point of view is a mere appendix of bacteriology, that when the means of infection and the vehicles of infection have been identified, the problem of an outbreak of herd sickness is solved. All the ideas of the ancients were dismissed as archaeological lumber. . . ."

And to quote the title of this paper—thus was the Clinical Bull let loose in the Ecological China Shop. Here I am put in mind of the Cheshire Cat, the feline in *Alice in Wonderland*, that wore a smile even when it wasn't there (chapter V). Neither the Clinical Bull, nor the Ecological China Shop are in effect perceptible, that is, unless one looks, below the surface of things, very closely and very critically. But that is precisely what we are committed to do forthwith.

We need not trouble to gauge once again the great achievements of Curative Medicine. They have been gauged for us many times over. Modern medicine, to quote my good friend Stevenson, has received the Blenheim treatment—it has been a tale of one glorious triumph after the other. And indeed, it is a fact that life has been affected remarkably. Between 1900 and 1950—the life expectancy at birth of the white male child had been extended by 17.3 years, and that of the white female child by 19.9 years. Practically all of the grievous infectious diseases that were rampant in 1900 were by the turn of the half century either eliminated in effect, or brought under firm control. One needs but to think of typhoid, diphtheria, scarlet fever, diarrhea, and enteritis, of tuberculosis, and pneumonia, to grasp at once how great have been the achievements of Curative Medicine. And in fact many do think just such thoughts, and are in effect dazzled, nay blinded, by the achievements of Curative Medi-

cine. For they are fixed in worshipful admiration and fail to see the rest of the ecological picture. The gain of 17.3 years in life expectancy is indeed very impressive, but most of that gain is effective for the age period under 20. At the age of 20 the gain is only 6.8 years: at 40 the increase in life expectancy is but 3 years, and at the age of 65 but one year. Contemplating these critical data one is forced to the conclusion that Curative Medicine effectively carries into the 3rd, 4th, and 5th decades of life many individuals who previous to its advent would have dropped out earlier. This conclusion is confirmed in the changes witnessed in the mortality spectrum. In 1900, pneumonia, tuberculosis, and diarrhea and enteritis accounted for more than a third of all deaths (36.5%). Heart disease stood fifth among the principal causes of death and was responsible for but 6.2% of the total deaths. Cancer ranked eighth and was charged with 3.2% of the annual deaths. In 1950 the leading causes of death were diseases of the heart and cancer. Together they were charged for almost two thirds of all deaths. These are impressive figures, but one might ask, what of them? Surely, man being mortal must die, why then not of heart disease or even of cancer, at an advanced age rather than of enteritis or diphtheria in infancy or childhood? Indeed why not? But here the ecological picture proffers some disturbing elements. If the gain were all in the nature of "sunlit life," years of well-being and effective living, it were well indeed. But the sober facts show that such is not the case. On the contrary, there is abundant evidence to show that Curative Medicine [to be distinguished from public health and preventive medicine], has to a very large extent converted mortality into morbidity. The reason many more among us live longer is not so much because we are better organisms, but rather because curative medicine is more competent to stave off the mortal issue of disease and decrepitude. Those whose lives it has helped to save in many instances face not an extension of existence in well-being and in health, but merely a prolongation of endurance. In the statistical tabulations such individuals appear to have gained years of welcome life. Too often, however, these prove to be years of painful travail, years of dependency, unproductive years, which in the last analysis are social and individual liabilities rather than assets. It is not possible to gauge this issue exactly, but there are available some very suggestive figures. Thus it is calculated that at least one sixth of our population, that is 25,000,000 individuals, suffer from chronic disease, and *more than half of these are under 45 years of age.*

Much is made of the increase in life expectancy at birth, gained during the last 50 years. It is indeed a fact that more persons live longer than

ever before. During the 15-year period from 1935 to 1950, the population of the Continental United States increased by 18.4%, while the percentile increase of those 65 years and over was 57.9%. But there should be coupled with these data those other that bear on the prevalence of chronic illness in this age group. Measured by total days of disability per person per year, the duration of illness is over three times greater in the group 65 years of age and over than it is in the general population. Again it is most pertinent to our thesis that in the two most competent morbidity studies made to date it has been shown that chronic diseases exact the greatest toll "of days disabled," two thirds or more of all days disabled in the general population, and about 90% in the old-age group.[6]

Time will not permit a more detailed exposition of how varied and how great has been the havoc wrought by the clinical bull in the ecological china shop. Much of it is mirrored in the frantic faith exhibited by the socially naive, who passionately argue that the remedy for the effects of Curative Medicine is an expansion of Curative Medicine. Medical history and some medical historians unfortunately aid and abet them in this.

In this affirmation I expose myself, I know, to that ugly appellation of nasty intention—Social Darwinism. But only the malicious and the ignorant could or would misconstrue my exposition and interpret it to mean that I would the weak and the ailing, the so-called unfit had not been saved to survive, but had been left to die. I intend nothing of the sort. Nor would I for a moment disparage the achievements of Curative Medicine, nor discard any of its most valuable resources. I would *not ban* Curative Medicine. I would reintegrate it with Ecological Medicine and thus achieve a modern Hippocratism.

Curative Medicine went astray when and where it tore text from context, and dissociated the microcosm from the macrocosm. It was an error to reify abstractions and to envisage specifics where none exist. The physician was thus seduced to believe that because a dose of Aspirin dulls the pain of an aching head, Aspirin *cures* headache. This seduction impedes his further inquiry into the derivation of the headache. What need, since Aspirin is so easily obtained and so cheaply!

One final note and that concerning medical historiography and the teaching of medical history; that clinicians and laboratory scientists should at times be misled and corrupted in their understanding of the significance and ecological importance of their work and achievements is understandable. They are, in the final analysis, operating as technicians.

[6] "Illness and Health Services in an Aging Population." *P. H. S. Pub.* No. 170, p. 4.

They are specialists of relatively narrow encompassment. That they should go wrong when venturing on the broad terrains of social and historical significance is understandable. But one cannot and one must not be so charitably indulgent with the medical historians, who, to the best of my knowledge and convictions, have not correctly assessed Curative Medicine in the framework of Hippocratic ideology, nor have troubled to interpret in terms of the dynamics of scientific thought the significant aberrational developments in the eighteenth century, and in the first part of the nineteenth century.

LUIGI CORNARO, A RENAISSANCE WRITER ON PERSONAL HYGIENE *

WILLIAM B. WALKER

In almost any current medical dictionary you will find listed an item entitled " Cornaro's method or diet," which is further defined as ". . . the preservation of health by a very abstemious diet, chiefly bread and meat with light wine. . . ." [1] This is a modest reference to the achievement of a unique figure of the Italian Renaissance, who has been described—although somewhat inaccurately—as ". . . the only man who has adopted a special system of eating, has written various treatises about it, and has lived for a hundred years. . . ." [2]

As a matter of record, Luigi Cornaro was born in Padua in 1467 and died there in 1565, at the age of 98. His Christian name is variously given as Ludovico, a Latinized form, or Alvise according to the local Venetian dialect which prevailed at that time. He was born into only moderate circumstances, although his family had once been prominent in the nobility of Venice. It appears that one of his ancestors, the son of a Doge, had been banished from the state for murder, and after some wandering had settled in Padua, then an independent city. Here he married and had three children, of whom the youngest, Antonio, was to become the father of Luigi. Shortly after Cornaro's birth, one of his uncles managed to reinstate himself as a Venetian citizen, and this, together with a fortunate marriage, helped to restore the fortunes of the family.[3]

Cornaro was thus able to grow up after the fashion of the nobility of his day. His early life was by his own admission dissipated and frivolous, and it was only after he adopted the regimen which made him famous that he undertook serious work. In his forties, however, he began to

* Read at the twenty-seventh annual meeting of the American Association of the History of Medicine, New Haven, Connecticut, May 7, 1954.

[1] *Stedman's Practical Medical Dictionary*, 15th ed., Baltimore, 1942, p. 250.

[2] *How to Live for a Hundred Years and Avoid Disease*, Oxford 1935 (This is a modern reprint of *Cornaro's Treatise of Temperance and Sobrietie*, London 1634). See Introduction, p. 7.

[3] *The Discourses and Letters of Louis Cornaro on a Sober and Temperate Life*, with a biography of the author by Piero Maroncelli and notes and an appendix by John Burdell, New York 1842. Cf. biographical chapt. by Maroncelli, pp. 128-31. (This work will be hereinafter cited as follows: text—*Discourses, Cornaro;* biography—*Discourses, Maroncelli.*)

take an interest in agriculture, which he called ". . . that most commendable of arts. . . ." [4] He soon became wealthy in his own right through the successful cultivation of land, and later was able to gain the rank of noble. In the meantime he had married Veronica, of the Spilembergo family, and had become the father of a daughter Clara. His family life was very happy, for though he had only one child, Clara was to present him with 11 grandchildren through her own marriage with Fantino Piscossia. Cornaro later wrote that Fantino ". . . seemed to have been created for his happiness, and that of his daughter . . ." while he more than once referred to his grandchildren as a delight of his old age.[5]

After the fashion of his time Cornaro used much of his wealth to patronize the arts. Among these architecture held his main interest. A contemporary, Marcolini the publisher, remarked that ". . . Cornaro was fully conversant with all that was known in architecture, as well as in many other departments of art. . . ." [6] One of his first protégés was a Veronese artist, Giovanni Maria Falconetto, whose sketches of Rome had induced Cornaro to visit that city. On his return to Padua he commissioned Falconetto to assist in the construction of three residences. One of these was a villa near Codovico, while another was at Lunigiano in the Euganean Hills. The most imposing of all, the Casa Cornaro in Padua, was decorated with designs by Raphael. Many of the plans for the bulding were drawn by Cornaro, although the execution remained in the hands of Falconetto. In addition, Cornaro designed flights of stairs on a magnificent scale, which when revealed at his Padua house drew praise even from craftsmen like Andrea Palladio.[7]

During the 1530s and 40s Cornaro was a member of a group of Paduans which met regularly at the home of Cardinal Pietro Bembo. This circle also included Sperone Speroni and Daniele Barbaro—both churchmen—and the poet-physician Girolamo Fracastoro.[8] These occasions gave Cornaro ". . . frequent opportunities of conversing with men valuable for their good sense and manners, their acquaintance with letters, and every other good quality. . . ." [9] Cornaro also read widely, and numbered several authors among his protégés. Angelo Ruzzante, the inventor of the masked comedy, was said to have written several plays at the villa in Codovico. Cornaro was particularly fond of staging such productions, and had a cabinet specially constructed in his Padua house for this purpose. On one occasion he himself turned playwright: ". . . at

[4] *Discourses, Cornaro,* p. 89.
[5] *Discourses, Maroncelli,* pp. 133-4.
[6] *Ibid.,* p. 138.
[7] *Discourses, Maroncelli,* pp. 134-6, 139.
[8] *Ibid.,* p. 138.
[9] *Discourses, Cornaro,* p. 42.

the age of eighty-three I have been able to write a very entertaining comedy, abounding with innocent mirth and pleasant jests. . . ." Of his other literary work, however, he was content to say that ". . . I write enough to be of service to others, both on architecture and agriculture. . . ." [10]

In his later years Cornaro took an increasing interest in public works. His suggestions led to a project which dredged and extended the estuary of Venice ". . . beyond the possibility of its filling for years to come. . . ." He likewise took pride in the ". . . success of draining and improving so many uncultivated pieces of ground . . ." as a means of raising the food supply for the city.[11] These activities were also of immediate benefit to the public health. According to Cornaro, the district near his villa at Codovico ". . . was so marshy and the air so unwholesome as to make it a residence fitter for snakes than men. . . . But on my draining off the waters, the air mended . . . and . . . the district is now . . . well inhabited. . . ." [12]

Cornaro's greatest pride was in his vigorous old age, and in the good health which had enabled him to attain it. He was to remain active until shortly before his death. This was made possible by following a regimen originally adopted to correct the ills which stemmed from his youthful extravagances. At the age of 35 Cornaro had as a result of prolonged dissipation ". . . fallen into different kinds of disorders, such as pains in my stomach, and often stitches, and spices of the gout . . . and a perpetual thirst. . . ." [13] Though it could not but aggravate his difficulties, he persisted in ". . . eating freely of every thing I liked best; and, likewise, feeling myself in a manner parched up . . . made no scruple of drinking, and in large quantities the wines that best pleased my palate. . . ." He further admitted wryly that ". . . like all other patients I kept . . . [this] . . . a secret from my physicians. . . ." [14] The doctors, for their part, decided that he was past curing, and warned that only a complete change in his manner of living would avert a premature death. ". . . They assured me . . . ," Cornaro later related, ". . . that a sober and regular life . . . would still be of the greatest service to me, and would be as powerful in its effects . . . [to] . . . recover me entirely, . . . as the intemperate and irregular one had been, in reducing me to the present low condition. . . ." [15]

At that time Cornaro was somewhat indifferent to these arguments,

[10] *Ibid.*, p. 48.
[11] *Discourses, Cornaro*, pp. 87-8.
[12] *Ibid.*, p. 44.
[13] *Cornaro, Discourses*, pp. 9-10.
[14] *Ibid.*, p. 12.
[15] *Ibid.*, p. 10.

except that he was distressed at the thought of dying in the prime of life. This overcame his reluctance, and he ". . . immediately concluded, that the foregoing contrary effects could not be produced except by contrary modes of living; and, therefore, full of hopes, resolved, in order to avoid at once both death and diseases, to betake myself to a regular course of life. . . . Having, upon this, inquired of them what rules I should follow they told me that I must not use any food, solid or liquid, but such as being generally prescribed to sick persons, is, for that reason, called diet. . . ." Once having started on such a restricted regimen, Cornaro soon found that ". . . such a course agreed with me . . . and by pursuing it, in less than a year I found myself . . . freed from all my complaints. . . ." [16]

The manner in which Cornaro had recovered from illness served to impress him with ". . . the power of temperance . . . to preserve health. . . ." [17] Hence he decided to find out what form of diet suited him best, and to adopt it in moderation, guided by his recent experience. Following several trials he found that it was doubtful ". . . that whatever pleases the palate, must agree with the stomach, and nourish the body. . . ." [18] Rather, it was more important ". . . not to take . . . anything . . . more than . . . my stomach can easily digest, and to use those things only, which agree with me. . . ." [19] For this purpose he found a satisfactory daily ration to consist of 12 ounces of bread, broth, egg yolk, and fresh meat, together with twelve ounces of wine.

Cornaro did not limit his regimen to diet, but also attempted to practice moderation in other ways. Henceforth he took care to avoid ". . . heat, cold, and extraordinary fatigue, interruption of my usual hours of rest, excessive venery, making any stay in bad air, and exposing myself to the wind and sun; for these, too, are great disorders. . . ." [20] He likewise tried, with somewhat less success owing to his hot temper, to control ". . . melancholy, hatred and other violent passions, which appear to have the greatest influence over our bodies. . . ." [21]

Cornaro claimed that this manner of living would maintain health even in the face of mishaps which would otherwise prove debilitating. As an example, he related his own experience at the age of 70, when his carriage was upset on the road, and he received ". . . shocks and bruises . . . and a dislocated leg and arm. . . ." His physicians wished to bleed and purge him, ". . . and thereby prevent my humours altering . . . to

[16] *Discourses, Cornaro,* pp. 12-13.
[17] *Ibid.,* p. 13.
[18] *Ibid.,* p. 14.
[19] *Ibid.,* p. 16.
[20] *Discourses, Cornaro,* p. 16.
[21] *Ibid.,* p. 17.

ferment . . . and bring on a high fever. . . ." Cornaro, on the other hand, secure in the belief that his regimen had so ". . . harmonized . . . my humours, so as to not leave it in their power to ferment, . . ." refused to be treated thus. Instead, he was content to have his leg and arm set, and his body rubbed with oil. He recovered without incident.[22]

On the other hand, an alteration in his schedule provoked illness in the absence of any other cause. Such was the result of a short period of over-indulgence at the age of 79. This was instigated by his friends, who convinced him that his diet, however adequate it may have been in middle life, was quite insufficient for an older man. Hence he was prevailed on to increase his daily ration from 12 to 14 ounces of solids, and from 12 to 16 ounces of wine. This soon served to make him ". . . peevish and irritable, . . ." and within ten days brought on a fever which sent him to bed for a month. His recovery, he claimed, was made possible ". . . merely by my former regular course of life, . . ." and by reverting to this he considered that he was henceforth kept free from sickness.[23]

The rewards of such discipline were the activities of a vigorous old age. Cornaro was by no means reluctant to point out ". . . how gay, pleasant, and good-humored I am . . . how I mount my horse without any assistance . . . [and] . . . how I not only ascend a single flight of stairs, but climb a hill from bottom to top, afoot. . . ." [24] Moreover, he still enjoyed singing, particularly with his grandchildren, ". . . for I have . . . a clearer and louder pipe than at any other period of my life. . . ." [25]

Cornaro recorded this autobiography, together with his thoughts on the virtues of moderation, in a series of essays which he wrote late in life. These are collectively known as the *Discorsi della Vita Sobria*, or *Discourses on a Sober Life*. They include a *Trattato della Vita Sobria*, or *Treatise on a Sober Life*, written in the author's 83rd year, together with three shorter pieces, a *Compedio* or *Compendium*, written at the age of 86, a *Littera* or *Letter to Signor Barbaro*, composed at 91, and an *Amorevole Esortazione*, or *An Earnest Exhortation*, written at 95.[26] Of these the *Trattato* is a major work, containing virtually all of the author's own ideas on healthful living, while the remaining treatises serve chiefly as condensations or further illustrations of certain points.

Though the *Trattato* is concerned with describing the effect of introducing a strict regimen into the author's life, it is also devoted to

[22] *Ibid.*, pp. 20-1.
[23] *Discourses, Cornaro*, pp. 22-5.
[24] *Ibid.*, p. 42.
[25] *Ibid.*, p. 50.
[26] *Discourses, Maroncelli*, pp. 141-2.

justifying moderation as a matter of principle. A sober life is shown to have three advantages: it avoids intemperance, preserves health and happiness, and enables one to attain a ripe and enjoyable old age. Intemperance has roots in gluttony, and, ". . . murders every year more . . . than the most cruel plague, or by fire and sword in many battles. . . ." Yet it can be overcome completely by resolving ". . . to eat no more than is absolutely necessary to support life. . . ." [27] Within this limit one is safe in selecting whatever food suits one best. Moreover a regular regime is the basis of an orderly way of life, which is the best defense against disease. Herein each man can be his own physician, for he alone knows best how to adapt a schedule to his own constitution. ". . . Since a man cannot have a better physician than himself, . . ." Cornaro continued, ". . . nor any physician better than a regular life, a regular life he ought to embrace. . . ." [28] Such a regimen not only prolongs life, but also makes old age more desirable, since this is no longer rendered decrepit by illness. Indeed, it gives a man ". . . such a constant serenity, that he is always perfectly master of himself. . . ." [29]

The *Trattato* was finished by 1550, but was not published until eight years later. It was initially well received, for the author noted his ". . . satisfaction to hear that numbers, on seeing my treatise, have embraced such a life. . . ." [30] Indeed, for some time the *Trattato* continued to appear separately from the other essays. Though originally written in the vernacular, it was subsequently translated into Latin by Leonard Lessio, a Jesuit. He prefixed this to a work of his own, the *Hygiasticon*, which was published at Antwerp in 1613. This edition was subsequently rendered into English by the poet George Herbert in 1634, and thence reprinted several times. A new Latin translation of the *Trattato* appeared again at Padua in 1714, with a generous commentary by Bernardo Ramazzini. Ramazzini, though better-known for his monographs on occupational disease, had only recently published a health manual—*The Art of Preserving the Health of Princes*—dedicated to his patrons, the d'Este family. Using the privilege of an editor, he prefixed this to the new edition of the *Trattato*. Though this version was quite popular, and was subsequently translated into French, the *Trattato* was to appear henceforth in combination with the shorter essays.[31]

The larger volume of *Discorsi* was first published at Milan in 1627, and again in 1646. This work also appeared in numerous editions and

[27] *Discourses, Cornaro*, pp. 6-7.
[28] *Ibid.*, p. 28.
[29] *Ibid.*, p. 30.
[30] *Ibid.*, p. 110.
[31] *Discourses, Maroncelli*, pp. 145-6.

translations. In 1647 a French edition of three of the treatises—the *Compedia* being omitted—was brought out in Paris.[32] An old German translation of 1715 combined the full text with a receipt book of the Englishman Richard Lower, and several other tracts on drinking, health, and domestic medicine.[33] Henceforth English was the language of the majority of publications. The first of these, by Jones, appeared in 1704, and was reprinted at intervals extending well into the 19th century, running to some 50 editions altogether. An anonymous translation of 1737 also included an essay, "Rules for Health," by Joseph Addison. Several other less distinguished editions followed, until in 1768 a more definitive translation was achieved. This version came from one of the Italian editions, rather than from a Latin or French derivative, and was included in Sir John Sinclair's *Code of Health and Longevity* when it appeared in 1806.[34]

By this time some of these editions had begun to circulate in the United States. The 1737 version was published at Philadelphia in 1793. Three years later it was reissued from the press of Parson Weems, in combination with Benjamin Franklin's *Immortal Mentor, or Man's Unerring Guide to a Healthy, Wealthy, and Happy Life.* A reprint of the 1768 edition which also included a tract entitled "Physic of the Golden Age, a Fragment," furnished the basis of several subsequent publications. These appeared at New Haven in 1823, at New York in 1833, and at Middletown, New Jersey in 1836.[35]

The New York edition omitted the "Fragment," but compensated by adding notes, introduction, and comment by Sylvester Graham (1794-1851). Graham, though originally trained for the ministry and later a Temperance agent, had only recently embarked on a crusade for health reform. This, he said, was to be achieved principally through adherence to a spare diet which stressed 'bran-bread' made from coarse-ground unbolted wheat meal. The apparent success of Cornaro with a restricted regimen seemed to have propaganda value for Graham's cause.[36]

The next edition, which also appeared at New York, in 1842, was similarly motivated. This was the first version originally published in the

[32] *Trois Discours Nouveaux de Louis Cornaro*, Paris 1647.

[33] *Englisches Artzney-Büchlein*, in zwei Theilen, ed. M. C. Ludovici, Leipzig 1715.

[34] Cf. W. E. Axon, "Cornaro in English," *The Library*, London, n. s. Vol. 2 (1901), p. 120 ff.

[35] The full title was *The Discourses of Louis Cornaro on a Sober and Temperate Life*, to which is added *Physic of the Golden Age, A Fragment.*

[36] M. W. Genzmer, "Sylvester Graham," *Dict. Am. Biog.*, New York 1931, vol. 7, pp. 479-80.

United States, and offered a new translation with notes, as well as an authoritative biography of Cornaro by Piero Maroncelli.[37] The editor, John Burdell, was a follower of Graham, while Maroncelli revealed himself as a disciple of Charles Fourier. Unfortunately, this interesting edition was not reprinted, and during the ensuing years interest in Cornaro appeared to decline. The last edition of importance, which included essays by Addison, Francis Bacon, and Sir William Temple, was published at Milwaukee in 1903.[38]

The succession of publications of Cornaro's work reflects a level of popular interest which was sustained for several centuries. This was primarily owing to laymen, as the medical profession was for some time indifferent. Cornaro himself was not a physician, and though proficient in Latin, the language of scholars, preferred to write in the vernacular for popular consumption. In consequence, the interpretation of the *Discorsi* was bound to shift with the predilections of the times.

At first the public was drawn to the picture of longevity attained and enjoyed, as this long-sought goal had an almost perennial appeal. Later, in the 18th century, popular interest shifted to view Cornaro's work as a health manual, which could serve not only to educate the ruling classes, but also to offer hope for improvement in the general health. This feeling, largely stimulated by the Enlightenment, was likewise responsible for an outpouring of literature of a similar genre by contemporary authors. These works varied from short health tracts to manuals of domestic medicine, as illustrated by Tissot's *Avis au Peuple* (1762), Faust's *Gesundheitskatechismus* (1794), and Sinclair's *Code of Health and Longevity* (1807).[39]

By the 19th century interest had narrowed once more to selected topics. The restricted nature of the regimen and the ideal of moderation appealed especially to romantic reformers such as Graham and other health sectarians in the United States. When these movements later gave ground before the advance of scientific medicine, some observers then began to point to Cornaro as a forerunner of contemporary ideas on personal hygiene.

Yet at the present time the cumulative body of descriptive and critical literature on Cornaro remains meagre. He was, of course, mentioned

[37] Cf. note 3.

[38] *The Art of Living Long*, Milwaukee, Wm. F. Butler, 1903.

[39] S. A. Tissot, *Avis au Peuple*, Paris 1762; B. C. Faust, *Gesundheitskatechismus*, Hanover 1794; Sir John Sinclair, *Code of Health and Longevity*, 4 vols., London 1806-7.

frequently in the informal communications of contemporaries such as Bembo, Speroni, Fracastoro, and Jerome Cardan.[40] He was also discussed briefly in historical works of the period, such as de Thou's *History of his own Times*.[41] Later editions of the *Discorsi* carried biographical notices, but these were generally second-hand and unreliable. Only the work of Maroncelli showed evidence of any investigation. In 1900, William Axon, an Englishman, contributed an analysis of the bibliography in English,[42] and later a short biographical article which appeared in the American periodical *Good Health*.[43] In more recent times George Sarton has discussed Cornaro as a centenarian.[44]

In the last few years, however, some attention has been given to an analysis of Cornaro's diet. In an introduction to an English translation of 1935, George Cooke commented, not disapprovingly, on the low number of calories, the limited variety, and the absence of any appreciable roughage.[45] Marcovitch, in a yet more recent paper, points out that Cornaro undoubtedly suffered from annual attacks of Vitamin C deficiency, from which he recovered only when the new wine came from the harvest.[46] These criticisms, though detailed, did not attempt to evaluate Cornaro's work from the point of view of personal hygiene.

Unfortunately, earlier criticism had been still more superficial. The notes of Ramazzini in the edition of 1714, though extensive, were primarily a commentary which sifted out leading topics, such as force of habit, the effects of drinking, the advantages of old age, and the protection afforded by a sober life, without evaluating them in relation to medicine.[47] Sir John Sinclair was content to ask ". . . How . . . the business of the world could be carried on if every man, like Cornaro, were . . . to follow that system . . . [from] . . . the fortieth year of his age? . . ." [48] A nineteenth century Italian editor, Francesco Guasco, attributed Cornaro's health and longevity to his wealth rather than to his regimen, for

[40] Cf. *Discourses, Maroncelli*, p. 138.

[41] *Sure and Certain Methods of Attaining a Long and Useful Life by Lewis Cornaro*, London ed. 1737, pp. 141-3.

[42] Cf. note 34.

[43] W. E. Axon, "Cornaro," *Good Health*, Battle Creek, Mich., vol. 35 (1900), pp. 394-6.

[44] George Sarton, "Hoefer and Chevreul (with an excursus on creative centenarians)," *Bull. Hist. Med.*, vol. 8 (1940), pp. 419-445.

[45] *How to Live for a Hundred Years*, etc., Introd. pp. 9-31.

[46] S. Marcovitch, "An early record of Vitamin C deficiency," *Bull. Hist. Med.*, vol. 14 (1943), pp. 395-7.

[47] *Les Avantages de la Vie Sobre*, ed. Bernardo Ramazzini, Leyden 1724, p. 247 ff.

[48] Axon, in *Library*, pp. 128-9.

he insisted that ". . . tranquillity was impossible in the midst of penury. . . ." [49]

These arguments can be readily refuted by referring to Cornaro's text. The dissipation of the author's early years was directly attributable to his affluent circumstances, and his later regeneration was to a large extent achieved despite the obstacles which wealth created. Moreover, the versatile activities of his later life belied any elements of negativism which might be attributed to his new regimen. Incidental criticism of this nature, as well as more serious attempts to examine the elements of Cornaro's thought, uniformly fail to recognize his relation to the development of ideas of personal hygiene.

Cornaro's method unquestionably lacked many details of an adequate health program. There is no mention of bathing or other aids to cleanliness, and the importance of proper clothing, fresh air, and exercise is neglected. His diet was unduly restricted, both as to quality and quantity. Yet these separate elements are of secondary importance compared to the principles which they serve to indicate.

Cornaro's viewpoint was catholic rather than sectarian. He was not a conscious reformer, and viewed good health and long life among his many other interests. Though his own regimen was born of an intense personal experience, he offered it to others not as a literal model, but as a paradigm to which they could adapt their own variations. He never argued, a priori, for total adherence or abstinence to any particular article. Indeed, for this "lapse" he was roundly criticized by the American health reformers. Instead he recognized the importance of the individual constitution in determining for each man the components of his proper regimen. Cornaro indicated that, as guides, principles of selection and limitation should govern the quality and quantity of food, and that moderation rather than repletion should be the goal of diet. He saw the value of regularity and a calm temperament in promoting a happier and more useful life—indeed, this principle may have partly compensated for some of the gaps in his own program. Above all, he recognized that considerations of health were a factor in guiding one's daily life.

Thus when all contemporary factors have been considered and sifted, Cornaro emerges as one of the first of modern writers to reassert the role of the individual in pursuit of his health. Doubtless Fielding Garrison had this in mind, when he described the *Trattato* as ". . . the best treatise on personal hygiene and the 'simple life' in existence. . . ." [50]

[49] *Discourses, Maroncelli,* p. 149.

[50] Fielding H. Garrison, *Introduction to the History of Medicine,* 3rd ed., Philadelphia 1921, p. 228.

HEALTH INSURANCE IN NEW FRANCE

A Footnote to the History of Medical Economics *

A. D. KELLY

The fundamental change which has taken place in the economics of health care has been accompanied in our times with so little dislocation of the pattern of medical practice in North America that many physicians are unaware of its extent. The application of the insurance principle to the provision of medical and hospital services, the growth of prepayment plans, and the presence of a third party holding the purse strings in the traditional doctor-patient relationship, is regarded by many others as a significant phenomenon of the twentieth century.

In common with many observers of the current unfolding of these medico-economic developments, it was until recently my impression that medical care by prepayment was a device of modern origin. As my experience is largely confined to the Canadian scene, I had assumed that the check-off system of prepaid medical care imported with the Scotch colliery workers of Cape Breton and established about 1864 (1), represented the earliest example of such plans in Canada. Incidentally, this plan, which constitutes an example of the capitation method of payment for services, still operates in its original area.

The first clue to a much more ancient arrangement came when I read an address by Mr. D. W. Ogilvie (2), Director of the Plan for Hospital Care (Ontario Blue Cross). In this paper Mr. Ogilvie makes brief reference to two contracts dated 1655 and 1681 which appear to provide respectably ancient precedents. On further investigation, I found that Maude Abbott, in her *History of Medicine in the Province of Quebec* (3), had mentioned these unique records, and her reference to a contribution by E. Z. Massicotte in the *Rapport de L'Archiviste de Québec*, 1922-23 (4) provided copies of the contracts in archaic French.

The following is a translation of the earliest of these documents which is still preserved in the Archives of the City of Montreal:

* Read at the twenty-seventh annual meeting of the American Association of the History of Medicine, New Haven, Connecticut, May 8, 1954.

March 3rd, 1655

Before us, the undersigned, Lambert de Closse, Clerk and Tabellion of Ville Marie on the Island of Montreal,

Were present in person; Urbain Tessier called La Vigne, Louis Gueretin, Nicholas Millet, Gilbert Barbier, . . . and thirty-two others, . . . acting both for themselves and their families and children, of the one part, and

Estienne Bouchard, Master Surgeon of the said Ville Marie of the other part,

Who, in the presence of the Governor of the said Island have come to the following agreement, namely that the said Bouchard undertakes and obliges himself to dress and to physic for all sorts of illness, whether natural or accidental, except the plague, smallpox, leprosy, epilepsy and lithotomy or cutting for the stone, until a complete recovery or as complete as may be possible, in consideration of the sum of one hundred sols each year for each of the above mentioned persons and for their wives and children, payable in two terms and quarters, the period to begin to run today. And for their children who may hereafter be born, from the day of their birth, and, in the event of the death of any one of the above mentioned, the said Bouchard shall nevertheless be paid for the full year no matter in what season or day such death should take place. Moreover the said Bouchard shall be at liberty as shall be the other parties hereto, to cancel the present agreement at any time and at their discretion upon giving due notice to those concerned, such notice, however, to avail only for the years which have not begun to run, moreover the said Bouchard shall not be entitled to cancel the present agreement with respect to any persons who are suffering from any illness unless he has first cured them or unless such cancellation be with their consent.

Done at the Fort of Ville Marie on the said Island on the third day of March, one thousand six hundred and fifty-five, where thirteen of the above mentioned have signed with the said Bouchard and the remainder declare themselves unable to sign.

Paul de Chomedy
L. Closse

A codicil dated April 4th, 1655, records the names of six additional persons who declare that they also are parties to the above contract with Estienne Bouchard.

Any physician interested in the operation of a plan of voluntary prepaid medical care or any twentieth century insurance executive will recognize in the terms of this early indenture a valid contract in the field of health insurance. The coverage is specific, the exclusions definite, the group an insurable one, the benefits broad and provision for termination is included. Urbain Tessier, the first named subscriber, is evidently the counterpart of the " group leader " of today, whose duty it is to collect the premiums and maintain the rolls of additions to and deletions from the population at risk. I doubt if the heads of the families covered were " employees of a common employer " and it seems more likely that the group was formed because they lived in the same neighbourhood, or were parishioners of the same curé or possessed some other common denominator which prevented adverse selection against the plan.

Although freedom of choice of doctor was not a feature of this contract, it is probable that the number of doctors in the frontier settlement of Ville Marie did not permit great scope. Indeed, the colony had been established only thirteen years earlier when Maisonneuve in May 1642 founded a religious community on the Island of Montreal.

The underwriter of this early medical care contract, Estienne Bouchard, was born in France in 1622 and he appears to have received his medical training in Paris, probably as apprentice to a barber surgeon. In 1653, at the age of 31, he crossed the sea to New France, under engagement for a period of five years to the Compagnie de Montreal. He seems to have had a penchant for receiving his remuneration in advance, since biographical notes (3) (4) indicate that he had received a prepayment of 147 livres for his services to the Company. His contract evidently permitted additional private practice to be undertaken. Neither the rigors of life in an outpost nor the constant threat to the colony imposed by the hostile Iroquois appear to have dismayed this professional forebear of ours, because he remained in the growing settlement at the foot of Mount Royal and attained the status of a substantial citizen. He himself contributed to medical education, for it is recorded that in at least one instance he accepted for training a serviteur-chirurgeon for a consideration of 150 livres per year and his keep. He served as surgeon to the Hôtel Dieu de Montréal from 1659 to 1670 and died in the colony in 1676.

The premium of 100 sols per family per year seems at this distance to have provided a bargain for the subscribers. I have been at some pains to relate this subscription to monetary values of the day and have read the Canadian authority Adam Shortt (5) (6) with great care and some bewilderment. The sol was a copper coin minted in France said

to have a value of 24 deniers, and 20 sols constituted a livre. Trade in the colonies of New France in the mid-seventeenth century was carried on mainly by barter and the unit of value was the beaver pelt. Subject to the fluctuations caused by competitive trading and complicated by the monopolies granted to certain companies as well as the regulations of administrative officials, the worth of a beaver pelt appears to have varied between 2 livres and 8½ livres.

Although the economic historians are understandably reluctant to equate the currency of New France in terms of modern money, Maude Abbott boldly states that the livre is equivalent to twenty cents. I am prepared to accept her valuation in preference to dealing in beaver skins and on this basis we arrive at a family premium of $1.00 per year for the very comprehensive coverage of this insurance contract.

All of the ills of these substantial families were covered except the few disabilities specifically excluded. One cannot believe that the incidence of vesical calculus in this group would be sufficiently high to constitute a major problem and it is possible that Bouchard respected the Hippocratic injunction to leave cutting for the stone to those better qualified or, in the custom of the day, to the lithotomists. His claim to the title Master Surgeon was, however, probably as valid as that of his contemporary barber surgeons. The terminology used to denote his professional qualifications has an interesting survival in the degree Medicinae Doctor et Chirurgiae Magister which is still conferred by some Canadian medical schools at the end of the undergraduate course.

Epilepsy is an interesting exclusion and it probably reflects the demands in time, drugs, and patience required for the management of this troublesome state. When plague or smallpox in epidemic proportions visited the settlements of three hundred years ago the whole resources of the community were mobilized to minimize its effects. Such public health practices were recognized as beyond the resources of the individual physician. There is an interesting parallel in many modern contracts of prepaid medical care which exclude illnesses such as pulmonary tuberculosis and mental illness, which are commonly regarded as community responsibilities.

It is uncertain whether the obligation " to dress and to physic," imposed upon Estienne Bouchard the necessity of supplying drugs and dressings under this contract. The source of these essential adjuncts to medical care may have been the physician but I am inclined to believe that this pioneer in the economics of medicine was sufficiently shrewd to avoid responsibility for the pharmaceutical benefit which has proved to be such a

troublesome, expensive, and uncontrollable feature in modern health insurance schemes.

The other contract, dated August 20th, 1681, is of a distinctly different sort. Although it has a superficial resemblance to the Blue Cross-Blue Shield contract for "medical, surgical and obstetrical care in hospital" its essential difference is that it constitutes an undertaking between the governing body of the hospital and two employee members of the medical staff. A translation of the text is as follows:

August 20th, 1681

Before the undersigned notary, of the Island of Montreal in New France and the undersigned witnesses, were present:

Reverend Mother Renée Le Jumeau, Superior of the Dames Religieuses Hospitalières of this place, Sister Marie Morin, Depositary of the Hospital of the one part, and

Sieurs Jean Martinet de Fonblanche and Antoine Forestier, Master Surgeons, residing in this town, who have entered into the following agreement, namely;

The said surgeons promise and oblige themselves well and truly to serve the Hospital of Ville Marie, to treat, dress, and physic all the sick persons who may be there, and this for periods of three months each in turn and to visit such sick persons assiduously at about seven o'clock each morning and at such other hours as may be necessary, and this for and in consideration of the sum of 75 livres each per year. To commence the time of their service from the first of July last, and upon condition that the said surgeons may not claim or seek to recover anything else whatever from the said patients nor from the boy who serves the said Hospital, either for shaving or for any other reason.

And they shall furnish only their own labour and effort, all remedies to be furnished by the Hospital and moreover, the said surgeons promise and undertake to visit the said Hospital, the one in the absence of the other when they may be so required.

For in this manner promising, etc., obliging, etc., renouncing, etc.,

Done and passed at the said Hospital with the approbation of Messire Gabriel Souart, former priest of the Seminary of St-Sulpice of Paris, now residing in the Seminary of Montreal, their superior, and in the presence of Sieur Louis Marin Boucher Boisbuisson and of Pierre Maguet, witnesses there residing who with the said Dames

Religieuses, the surgeons, and the undersigned notary and Sieur G. Souart, have signed August 20, 1681.

G. Souart
Soeur Renée Le Jumeau
Soeur Marie Morin
A. Forestier
J. Martinet
Maguet
Mague, Notary.

Although this document has elements in common with today's insurance contracts, it also has features which reflect the hospital practices of its day. Provided as a charity by the good sisters, the Hôtel Dieu existed to care for the needs of the poor. Patients above the class of the medically indigent were rarely admitted. It would appear that the system of honorary attending medical staff had not been established and the Mother Superior undertook to see that her charges were adequately cared for by engaging two early rising doctors of the growing Ville de Montréal. The scope of work to be undertaken and the remuneration provided suggests that the incumbents were skilled in the medicine and surgery of three hundred years ago. Extra billing of patients, a troublesome feature of certain modern insurance contracts, was specifically excluded. The curious reference to the boy who serves the hospital suggests that certain perquisites, notably barbering (pour le razer), had been the subject of abuses. Alternatively, it may refer to the association of barbering with surgery and the boy may have been serving his apprenticeship at the hospital in the capacity of intern or understudy to the barber surgeons who constituted the professional staff. At any rate the boy was specifically protected from any undue demands which might be made upon him.

It is evident that the desires of patients to provide themselves with the means of budgeting against the costs of illness is no new development. Every schoolboy is taught the custom of the ancient Chinese to pay the doctor during periods of good health and to expect his services during illness. Although this is often quoted as an example of Oriental perverseness, the principle underlies our modern approach to prepaid medical and hospital care. The early colonists of the New World adapted the device to their needs and in the terms of these contracts anticipated many of the features of today's approach to the economics of health services.

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THE HISTORICAL RELATIONS OF AMERICAN DENTISTRY AND MEDICINE *

L. LASZLO SCHWARTZ

The relation of American dentistry and medicine has been the subject of constant discussion and occasional controversy for over a century. Since 1840, there has existed in the United States an independent dental profession with its own schools, journals, and organizations. Yet the historical roots of dentistry are inseparably intertwined with those of medicine. For dental science, from the time of Hippocrates, grew out of the same soil as medical science. Fallopius, Eustachius, Leeuwenhoek, and John Hunter nourished dentistry as assiduously as they did medicine. Dental art is likewise bound historically to surgery: from Albucasis to Paré to Fauchard, the father of dentistry.

In spite of its long historical ties with both medicine and surgery, dentistry has a separate and continuing history of its own. Though one of the specialties of ancient Egyptian medicine, dentistry even at this time, had some special features which differentiated it from the rest.

"The foundation of medical specialism," writes Rosen, "is heterogeneous, some specialties having developed around technical procedures, others taking as their province specific age groups, while still others have confined themselves to organs and organ systems." [1]

The organ system with which dentistry concerns itself consists of teeth imbedded in jawbones moved by muscles about a complex pair of joints. The primary function of the mouth is, of course, mastication. Speech, emotional expression and satisfaction are some of its other uses. Freud points out that in ancient Egyptian art, even the divine Horus was represented with a finger in the mouth.[2]

In the mouth, most disease is local, attacking only the teeth and their supporting structures. Both dental caries and pyorrhea are ancient diseases to which there is little or no resistance, and dental caries continues to be an endemic disease of civilization with the cause unknown.

Since the teeth were ideally suited to mechanical manipulation their

*Read at the twenty-seventh annual meeting of the American Association of the History of Medicine, New Haven, Connecticut, May 8, 1954.

[1] Rosen, George: *The Specialization of Medicine with Particular Reference to Ophthalmology*. New York, 1944. p. 3.

[2] Freud, Sigmund: *A General Introduction to Psychoanalysis*. Garden City, 1943, p. 288.

diseases did not require the highly specialized instruments or scientific knowledge that were prerequisites for other cavities of the human body. Handicraft was applicable, with crude instruments, and relatively effective with little or no science.

The means of satisfying the need for care of this important area depended upon technology. Phoenician and Etruscan craftsmen during antiquity utilized dental techniques which, in principle, are identical with many in use today. But in addition to technology, there was the need for dexterity and dexterity was something which could be easily evaluated by the patient.

This is especially true of dentistry whose help, unlike that of surgery, was sought not only in despair, but also in hope. Dental disease and its treatment could torment the patient—but rarely did either kill him. The dental patient could be depended upon to survive—and to criticize. It is understandable why surgeons avoided a calling so hazardous to professional reputation and left it to itinerants. Fauchard bemoaned this neglect in the following words: "The most famous surgeons having abandoned this part of the art, or at least having paid little attention to it, have caused by this negligence, the rise of people who without theory or experience, have degraded it, and practiced haphazard, without principles or method." [3]

There was no shortage of either dexterity or ingenuity in Fauchard's France. The lack was in the freedom and opportunity for dentistry to utilize them. It is not surprising then that dentistry developed further and progressed faster in a young America without guild or other restrictions—a country untouched by the old and bitter antagonism between medicine and surgery.

American dentistry drew its recruits from among the dextrous and ingenious of every walk of life—craftsmen, physicians, engineers, and ministers—all were attracted to dentistry by its challenges and its opportunities. In addition to the varied occupations constituting the core of the American dental profession, there was a sizable group characterized by an early American dentist as "those worthy Gentlemen, ill-naturedly nomenclated Quack Doctors, Toothdrawing Barbers, Nostrum Mongers, and Itinerant Mountebanks." [4]

In 1834, fifty reputable dentists formed the Society of Surgeon-Dentists

[3] Fauchard, Pierre: *The Surgeon Dentist* (Translated from the 2nd edition, 1746, by L. Lindsay). London, 1946. Preface p. 8.

[4] Longbothom, B. F.: *Treatise on Dentistry, etc.* Baltimore, 1802.

of the City and State of New York. Medical journals welcomed the society warmly, one referring to dentistry as ". . . this highly important and useful branch (of medicine)." [5] Probably the most important stated object of the new organization was to "discountenance the efforts of knaves and quacks." [5]

The two particular knaves and quacks in mind were the notorious empirics known as the Crawcours. The Royal Mineral Succedaneum which they introduced with drums and trumpets in 1833 has become the widely used filling material—silver amalgam. At first, patients thronged to their doors in numbers sufficiently large to seriously affect the practices of the city's leading dentists. The Crawcours soon disappeared, but the filling material remained. Finally, in desperation, the society in 1843 proscribed its use and asked each member ". . . to pledge himself never, under any circumstances, to use it in his practice as a dental surgeon . . ." [6] This divided the society, eventually destroying it.

Fast upon the heels of the Crawcours affair followed another event—the financial panic of 1837. Because of the widespread unemployment and the lack of legislation, dentistry was overrun by unqualified practitioners, the number of dentists doubling during the two years of the depression. For qualified dentists, professional status marked by an academic degree became a question of survival. In no other way was it possible for the public to differentiate the professional dentist from the dental upstart.

Efforts to interest medical schools in dental education failed, mainly because medicine was then having its own troubles. At the time, medical education, formal or by preceptor, was hardly the place to develop and teach the exacting technical arts of extraction, gold foil filling, and the fashioning of artificial dentures. Preceptorships available with outstanding dentists were few and expensive, and the crude surgery of the day with its excisions and amputations had nothing to offer.

1840 was not the time for calm deliberation, but the time for decision and action. A means of acquiring immediate professional status for dentistry was essential. The decision to found a new school was not an easy one to make. When it was made, there was no thought that a non-medical institution was being brought to life. The petition to the legislature of Maryland to establish the Baltimore College of Dental Surgery read:

> The object of this institution is, to give those who receive its instruction, a thorough medico-dental education, so that when they enter upon the active duties of

[5] Weinberger, B. W.: The Origin of Organized Dentistry. *Bulletin of the Dental Society of the State of New York.* 5:61, 1937.

[6] Ibid. p. 76.

the profession, they may be enabled to practice it, not alone as a mere mechanical art, but upon sound scientific principles, as a regular branch of medicine.[7]

The main support for the new school, according to one of its founders, came not from dentists but from the medical profession itself, two-thirds of the advisory board being physicians. The medical profession recognized the new school and welcomed it in its journals. In the beginning, delegates from the school were welcomed to seats at the annual medical meetings.

Although medicine supported the development of dentistry, and physicians actually entered its ranks, the new profession was not a direct outgrowth of medicine. Samuel Fitch, a medically educated dentist and Horace Hayden, a founder of the Baltimore school had both attempted earlier, through lectures, to interest physicians in the practice of dentistry. Their efforts failed primarily because physicians were then thinking in terms of a humoral pathology, and not in terms of local disease.

The gulf which separated dental and medical thinking at the time is illustrated by the remarks of Amos Westcott, a prominent medically educated dentist. In answering another dentist, who in 1852 advocated the education of dentists in medical schools, Westcott suggested sarcastically that the author of such a plan, to be consistent, should not fill teeth but treat the constitutional causes of dental caries by bleeding, purging, and leeching his patients.[8]

Medicine during the first half of the 19th century was beginning to feel the impact of a scientific revolution which ended the age-old sway of humoral pathology and replaced it with a concept of local disease. This reorientation was accomplished with very simple means and without any modern instruments or methods or precise observation. The ophthalmascope was not invented until 1851, and the laryngoscope not until 1855.

Dental decay was clearly a local disease calling for a mechanical interference and thus remained untouched by humoral theory. Even the worm theory of dental decay was a local theory and fumigation—a local method of treatment. Dentistry did not require a scientific revolution to focus the attention of its practitioners upon local disease.

The unmistakable local character of dental disease and its treatment forced dental practitioners to become specialists and dental technology to advance speedily. Thus, dentistry had been a formal speciality and an organized profession for 25 years when in 1864 the American Ophthalmological Society was organized.

[7] Ibid. p. 67.

[8] Westcott, Amos: *A Review of Remarks on the Professional Education of Dentists, etc.* New York, 1852.

By this time, as a result of impressive achievements, American dentistry, as a profession, had become highly institutionalized. In 1859, the American Dental Association was formed. Dental schools in Baltimore, Philadelphia, and Cincinnati were thriving, and many dental journals were being published. Dentistry had good reason to feel confident in the course it had taken. The discovery of anesthesia in 1844 had not only ushered in an era of painless extractions but also had won for the young profession universal acclaim. The perfection of porcelain teeth and their mass production, the introduction of the easily processed and economical vulcanite as a denture base, and the perfection of gold foil as a really effective filling material—all heralded a new and rosy era for dentistry.

Meanwhile, medicine was grappling with the problems of specialization. Pediatrics and orthopedics, appearing in 1860 and 1861, were meeting strong resistance. As late as 1876, Samuel D. Gross, the greatest American surgeon of his time, stated that: "American medical men are general practitioners ready, if well educated, to meet any and every emergency, whether in medicine, surgery, or midwifery." [9]

The appearance of oral surgery as something distinct from either general surgery or dentistry, understandably precipitated controversy. In 1870, the University of Pennsylvania established a lectureship in "Oral and Associate Surgery." James E. Garretson, a dentist and surgeon with both dental and medical degrees, was appointed lecturer.

The medical world, sensitive to any specialization, gasped out a critical editorial entitled "What is Oral Surgery?" [10] The controversy which ensued not only opened a gulf between the medical and dental professions, but it also created a schism among the leading dentists of the day. Garretson held that his new specialty of oral surgery really encompassed all of dentistry. In 1881, he advised medically trained dentists to "Go into the American Medical Association not as dentists, but as oral surgeons—as gentlemen of full medical education." [10]

In spite of Garretson's great personal prestige and the fact that the American Medical Association actually did establish a section on oral surgery open to dentists with medical degrees, most dentists, regardless of degree, held that dentistry should embrace oral surgery and not that oral surgery should embrace dentistry. During the Civil War, a dentist on each side had made such dramatic contributions to the treatment of

[9] Gross, S. D.: A Century of American Medicine (1776-1876). *American Journal of the Medical Sciences* (New Series). 71: 432, 1876.

[10] Koch, R. R. E.: *History of Dental Surgery*. Fort Wayne, 1910. Vol. 1, pp. 387 and 391.

jaw fractures that it was clear that oral surgery was a main stem of dentistry, not of general surgery.[11]

The controversy subsided. Each profession went its own way. As a result of the impact of basic scientific discoveries, medicine became transformed and accomplished more, in the actual control of disease, in less than a century then it had in the previous millenium. Dentistry, though influenced by these discoveries, continued to develop mainly along technical lines and with such success that in dentistry the word "American" became synonymous with "excellence" throughout the world. Not until after the close of the century was there heard a dissenting voice.

This was the voice of William Hunter, an English physician who, in 1910, read a paper before the Faculty of Medicine of McGill University. In it, he accused dentistry of causing much illness by building "a veritable mausoleum of gold over a mass of sepsis to which there is no parallel in the whole realm of medicine or surgery."[12] His theory of focal infection was not new. Benjamin Rush had pointed to infected teeth as a cause of systemic disease, a century before. But now the theory fell on receptive ears. For this, the rise of bacteriology and the discovery of the x-ray were responsible. Overnight, dentists began to discuss the subject of oral sepsis almost exclusively. The time had come for dentistry to face its scientific problems squarely.

These had been under-emphasized but never completely ignored. Near the turn of the century, W. D. Miller, an American dentist, was applying the experimental methods of bacteriology, in Koch's laboratory, in a search for the cause of dental caries. Here evolved our present chemico-parasitic theory. At about the same time, in the United States, the varied and extensive investigations of G. V. Black had systematized dental operative procedures. His research emphasized the value to dentistry of a biological approach and the use of the scientific method.

During the early part of our own century, the conviction was growing among educators that dentistry had to draw closer to medicine if it was to become more than a mechanical art. This conviction was not new. In 1867, Harvard University founded the first university dental school as a result of the joint efforts of its Medical Faculty and the Massachusetts Society.

The Harvard Dental School flourished and, in 1940, President Conant

[11] Schwartz, L. L.: The Development of the Treatment of Jaw Fractures. *Journal of Oral Surgery.* 2: 193-221, 1944.

[12] Hunter, William: An Address on the Role of Sepsis and of Antisepsis in Medicine. *The Lancet.* 1: 82, 1911.

announced a new plan in dental education: The Doctor of Dental Medicine was to be awarded at the end of four academic years, and the Doctor of Medicine, at the end of another year and a half. This was severely criticized in dental journals. When the plan was abandoned, three years later, President Conant stated that this step did not indicate any change in principle, that Harvard would continue its 75 year old tradition of leadership in dentistry, which he called, "a branch of the medical profession." [13]

The Harvard experiment involved curricular changes. But in 1945, another controversy in dental circles was precipitated by an administrative change at Columbia—the merging of its Dental and Medical Faculties. Columbia's Dental School, founded in 1916, is important historically because of the concept on which it was based, the standards it established, and the climate in which these were introduced—ten years before the appearance of the Gies report [14] which initiated reforms in dental education.

Columbia stated its reasons for a dental school as follows: "Dentistry and Dental Education are on the threshold of extraordinary development but are unable to take advantage of their opportunities because of the traditional separation of dentistry and medicine. Dentistry has been shown by recent investigations and research to be logically a branch of general medicine." [15] The school is known today as the School of Dental and Oral Surgery of the Faculty of Medicine.

The perspective of a century is hardly adequate to attempt the unravelling of current trends in a subject as complex as the relations of American dentistry and medicine. But recent events in dentistry have been so promising that they deserve notice.

Black and McKay's discovery in 1915 of the basis for the present fluoridation of water supply is perhaps the most dramatic. This marks, regardless of result, the introduction of an epidemiological approach to dental caries and the recognition of this disease as a public health problem.

The growing interest of dentistry in physiology is also noteworthy. Physiology, which has already revolutionized surgery and medicine, may soon have far reaching effects upon dentistry. A knowledge of structure and technology are still the mainstays of dental practice. But if the growing interest in function continues, dentists may soon become as

[13] Editorial. Harvard School of Dental Medicine. *Journal of the American Dental Association.* 30: 1094, 1943.

[14] Gies, William J.: *Dental Education in the United States and Canada.* New York, 1926.

[15] *A Dental School on University Lines.* Columbia University in the City of New York. New York, 1916, p. 3.

scientific as they are already dextrous. In addition, dentistry's interest in basic physiological knowledge, the clinical experiences of other specialties, and the common use of investigative tools such as electromyography and radioactive isotopes will undoubtedly influence dentistry's relations with medicine.

With these trends in mind the words written in 1829 by Samuel S. Fitch, author of the first American dental text, seem timely. He said, "At present, a spirit of inquiry is abroad and I cannot, but anticipate a period, when, upon this subject, prejudices shall be removed, mal practices corrected, the darkness of ignorance be dispelled, and commensurate with the talents and worth of many of its professors, its extensive bearing upon health, and its happy influence upon society, (dentistry will) assume a correspondent rank among the Medical Sciences." [16]

[16] Fitch, Samuel S.: *A System of Dental Surgery.* New York, 1829, p. 23.

NOTES AND COMMENTS

CODEX PRINCETONIANUS ARABICUS 1075

R. WALZER

Twenty years ago, Professor H. Ritter and the present writer published a handlist of Istanbul manuscripts of Arabic translations of Greek physicians (H. Ritter and R. Walzer, Arabische Übersetzungen griechischer Ärzte in Stambuler Bibliotheken, *Sitzungsberichte der Preussischen Akademie der Wissenschaften*, phil.-hist. Klasse, 1934, XXVI, pp. 799-846).[1] It was mentioned in that paper that the scribe of cod. Fatih 3539, 'Uthmān ibn 'Alī as-Samarqandī was copying the second part of Galen's Summaria Alexandrinorum from 19th dhū-l-hijja 570 (A. D. 12th July 1175) until the last Rabī' I 571 (A. D. 18th October 1175) but that this manuscript cannot be complete since it deals only with sections 8.5.9.10.11 of the late Alexandrian Galen summaries and omits sections 12-16 (*op cit.*, p. 842). [Another dated manuscript in Istanbul, Aya Sofya 3609 (629 A. H. = A. D. 1233) contains sections 1-9 but sections 10-11, listed in the table of contents, are lost (*op. cit.*, p. 838).] Now it is an agreeable surprise to find the missing part of cod. Fatih 3539 in cod. 1075 of the Garrett collection of Arabic manuscripts in the Princeton University Library, which was bought in Egypt in 1924.[2] This manuscript consists of three parts. The first was copied A. H. 1138 = A. D. 1725, the third is also a relatively recent copy; both these parts do not concern us here. But the second part is dated early according to the colophon, in which it is emphasized that the whole of the Summaria Alexandrinorum is now completed, and the scribe adds his name: 'Uthmān ibn 'Alī ibn Muḥammad as-Samarqandī. He evidently had to interrupt his work for some time. Whereas the different sections to be found in the Istanbul manuscript were terminated on the 12th July 1175, at an unspecified date in August, on September 16th, October 9th and October 18th 1175 respectively, the sections preserved in the Princeton manuscript were not finished before the last day of Jumādā I 572, i. e. Saturday, December 4th 1176. A note on the title page informs us that it was in the library of a

[1] Cf. also M. Meyerhof, in *Orientalistische Literaturzeitung*, 1935, col. 524 f.

[2] Ph. K. Hitti, Nabih Amin Faris, Buṭrus 'Abd-al-Malik, *Descriptive Catalogue of the Garrett Collection of Arabic MSS in the Princeton University Library*, Princeton 1938.

physician in 623 A. H. (A. D. 1225). There are 21 lines to each page, as in the Fatih manuscript, and frequent notes added on separate sheets as in the other half. But there are no special dates at the end of the different books.

The Princeton MS contains summaries of the following works of Galen:

I) **Περὶ κρίσεων** *fī'l buḥrān* (cf. Ritter and Walzer, *op. cit.*, no. 13, p. 824)—19 leaves.

II) **Περὶ τῶν κρισίμων ἡμερῶν** *fī aiyām al-buḥrān* (*op. cit.* no. 14, p. 824)—11½ leaves.

III) **Περὶ διαφορᾶς πυρετῶν** *fī aṣnāf al-ḥummayāt* (*op. cit.* no. 12, p. 824)—14 leaves.

IV) **Θεραπευτικὴ μέθοδος** *fī ḥīlat al-bur'* (*op. cit.* no. 15, p. 824)—116 leaves.

V) **Ὑγιεινά** *fī tadbīr al-aṣiḥḥā'* (*op. cit.* no. 16, p. 825)—47 leaves.

Of these summaries no. I exists also in two other Istanbul MSS; no. II has not been traced anywhere else, to the best of my knowledge; a second copy of no. III can be found in one other Istanbul MS; no. IV seems again to be unique, Bodl. 615 (MS Hunt. 600) does not contain the same text;[3] the same statement applies to no. V; Leyden. Bibl. acad. 1299 is not a copy of the same text.[4] There can however be no doubt that MSS Fatih 3539 and Princeton 1075 part 2 are the oldest and best evidence for the text of nrs. 5.8.9.10.11.12.13.14.15.16 of the Summaria Alexandrinorum.

It is obvious that a study and an edition of these late Alexandrian texts is equally important for the history of Galen studies in the 6th century A. D. and for its continuation by Arabic speaking physicians within the orbit of the Islamic world. But with the exception of O. Temkin's Studies on late Alexandrian Medicine I. Alexandrian Commentaries on Galen's De sectis ad Introducendos, *Bulletin of the Institute of the History of Medicine* 3, 1935, pp. 405-430, no special study of this kind of text is available. The problem has been recently restated by the same author:

[3] As asserted in H. Diels, *Die Handschriften der antiken Ärzte, I*, Berlin 1905. (Abhandlungen der Preussischen Akademie der Wissenschaften) p. 93.

[4] Cf. *Ibid.*, p. 75. It is a not uncommon commentary of the same work of Galen by the Christian physician and philosopher Abu'l Faraj 'Abdallāh ibn aṭ-Ṭayyib (cf. C. Brockelmann, *Geschichte der arabischen Litteratur* I[2] p. 635; *Oriens* 6, 1953, p. 102). I wish to thank S. A. Bonebakker for having inspected the Leiden MS for me.

On Galen's Pneumatology, *Gesnerus* 6, 1951, particularly pp. 187 ff. Since the literature about these neglected texts is scattered and often unknown even to the few people who take a serious interest in it—the example of the Princeton catalogue illustrates the situation very well—I may be allowed to refer to some evidence for the supposed authors of the Summaria Alexandrinorum of Galen which may concern historians of medicine: M. Meyerhof and J. Schacht, *The Medico-philosophical Controversy between Ibn Butlan of Baghdad and Ibn Ridwan of Cairo*, a contribution to the history of Greek learning among the Arabs (The Egyptian University. Faculty of Arts, Pub. no. 13, Cairo 1937), p. 93 f.; R. Walzer, Fragmenta Graeca in litteris Arabicis I, Palladius and Aristotle (*Journal of the Royal Asiatic Society*, 1939), p. 407 ff.; R. Walzer, *Galen on Jews and Christians* (Oxford 1949), p. 96 ff. For Gessius (cf. W. Schmidt in Pauly-Wissowa s. v. i), one of the supposed compilers of the Synopsis and a pupil of the philosopher Ammonius, cf. Zacharias of Mitylene, Disputatio de mundi officio, vol. 85 col. 1065 f. Migne: ***ὃς νῦν αὐχεῖ τὴν Ἱπποκράτους τοῦ Κῴου καὶ Γαληνοῦ τοῦ ἐκ Περγάμου σοφίαν καὶ τῶν τὴν ἰατρικὴν φιλοσοφούντων διδάσκαλος παρὰ τὸν Νεῖλον προκάθηται κτλ.***

WEDGWOOD MEDALLION OF PETRUS CAMPER

MARIA ROOSEBOOM

Dr. Henry H. Fertig contributed an interesting paper to this *Bulletin* of March-April, 1954, on Wedgwood's portrait medallions of physicians. On page 136, the author states that the modeler of the medallion with Petrus Camper's portrait is unknown. I am pleased to inform you that the municipal museum of Leyden, " De Lakenhal," possesses a plaster cast of the wax model of this medallion, signed " Schepp fec." Johann Heinrich Schepp (1736-after 1789) was modeler of medals and court engraver to Stadtholder Willem V of the Netherlands. Schepp was famous for the good likenesses of his portraits. He was a member of a group of Dutch neo-classicists to which Petrus (not Pieter) Camper also belonged; the philosopher Frans Hemsterhuis was its leader.

Reproduced here is a photograph of the finely executed Wedgwood medallion in jasper ware (white head on lilac ground). The medallion is in the Rijksmuseum voor de Geschiedenis der Natuurwetenschappen (National Museum for the History of Science) in Leyden.

CONFERENCE ON THE TEACHING OF MEDICAL HISTORY

Held at the Institute, June 10-12, 1954

REPORT OF THE ACTIVITIES OF THE INSTITUTE OF THE HISTORY OF MEDICINE OF THE JOHNS HOPKINS UNIVERSITY

DURING THE ACADEMIC YEAR, 1953-1954

I. *Staff*

RICHARD H. SHRYOCK, William H. Welch Professor of the History of Medicine, and Director of the Institute.
OWSEI TEMKIN, Associate Professor of the History of Medicine.
SANFORD V. LARKEY, Lecturer in the History of Medicine.
LUDWIG EDELSTEIN, Lecturer in the History of Medicine.
EDWARD H. HUME, Lecturer in the History of Medicine.
BARKEV S. SANDERS, Lecturer in the History of Medicine.
HERBERT S. KLICKSTEIN, Fellow in the History of Medicine.
ROBERT P. MULTHAUF, Fellow in the History of Medicine.

To our great regret, Mrs. Robert S. Durling, secretary and research assistant to Dr. Shryock, resigned in June. Miss M. Eleanor Thompson has been appointed to the same post.

II. *Courses*

Outlines of the History of Medicine. Dr. TEMKIN. First Quarter.
Use of the Library. Dr. LARKEY. First Quarter.
History of Public Health and Medical Care. Dr. SHRYOCK and Dr. SANDERS, in collaboration with Dr. W. M. WING, School of Hygiene. Second Quarter.
History of Medieval Science. Dr. TEMKIN. Third Quarter.
Psychiatry in the Nineteenth Century. Dr. TEMKIN. Third Quarter.
History of American Medicine. Dr. SHRYOCK. Third and Fourth Quarters.

III. *Program in Medical History*

The general program was continued as in the preceding year, except for certain changes in the courses offered by Dr. Temkin. Two courses were given on the Homewood campus—that by Dr. Shryock on the

History of American Medicine and one by Dr. Temkin on the History of Medieval Science. These were attended largely by undergraduate and graduate students in liberal arts. As before, the course on the History of Public Health was given jointly by Dr. Wing, Dr. Sanders and Dr. Shryock, and was attended by advanced students from the School of Hygiene. In these ways the Institute sought to serve other schools in the University, while it continued its basic program for students in the School of Medicine.

In addition to work offered at the Johns Hopkins University, Dr. Temkin and Dr. Shryock again gave a short lecture series on general medical history at the College of Physicians in Philadelphia. These lectures were sponsored jointly by the College and the five medical schools in that city, and were attended by some 250 first-year students from these schools. The program will be repeated in the fall of 1954.

IV. *The Noguchi Lecture*

In December, Dr. Alexandre Koyré, of L'Ecole Pratique des Hautes Etudes, Paris, delivered the Noguchi Lecture. He spoke on the theme: "From the Closed World to the Infinite Universe: The Revolution in XVII Century Cosmology." It was a pleasure to welcome Professor Koyré to the Institute again, and his lecture will be published in the Noguchi series.

V. *Fellowships*

As previously announced, Dr. Herbert S. Klickstein and Dr. Robert P. Multhauf were in residence as Fellows throughout the academic year. Both continued their work on the history of chemistry in relation to medicine, and were active in reading papers and in the preparation of studies to be subsequently published. At the end of the year Dr. Klickstein accepted appointment as Resident in Radiology at the Graduate Hospital in Philadelphia, and Dr. Multhauf became a Curator in the Smithsonian Institution in Washington.

VI. *Activities of the Resident Staff*

Full-time members of the staff (Dr. Temkin, Dr. Klickstein, Dr. Multhauf and Dr. Shryock) supplemented their regular work by giving talks or papers at institutions and at meetings of professional societies. Among such institutions were the National Science Foundation, the Delaware Academy of Science, the Richmond Academy of Science, the New York

Academy of Medicine, University of Pennsylvania, University of Wisconsin (co-sponsored by Sigma Xi), University of Maryland, University of Georgia, Yale University, Emory University, Agnes Scot College, Randolph-Macon College, the Medical College of Virginia, the College of William and Mary, and Trinity College (Hartford). Papers were read at meetings of the following bodies: American Association for the Advancement of Science, the History of Science Society, the International College of Surgeons, and the American Association of the History of Medicine.

Dr. Temkin continued to serve as Editor of the *Bulletin of the History of Medicine*. In February, 1954, he delivered the annual Beaumont Lecture at Yale Unversity, speaking on "The Concept of Irritability."

Dr. Larkey again served as a member of the Maryland State Board of Public Welfare. Dr. Larkey was also active as a member of the Executive Committee of the Chemical-Biological Coordination Center of the National Research Council.

Dr. Shryock continued to serve on the councils of several national organizations, and was also a member of certain special committees of similar scope. Among the latter were the "Advisory Group" of the Armed Forces Medical Library; the "Committee on Relations of Higher Education to the Federal Government" of the American Council on Education; the "Administrative Board of the Papers of Benjamin Franklin," jointly appointed by the American Philosophical Society and by Yale University; and the Committee on "Humanistic Aspects of Science" of the American Council of Learned Societies.

VII. *Publications*

Volume XXVII of the *Bulletin of the History of Medicine* was completed in the November-December issue of 1953. This contained v + 606 pages and 24 illustrations.

In addition to the *Bulletin*, the Institute published during the summer of 1954—through the Johns Hopkins University Press—three books pertaining to medical history. These were as follows:

Ludwig Edelstein, *The Hippocratic Oath: Text, Translation and Interpretation*. Supplements to the *Bulletin of the History of Medicine*. (Reprint of the original edition of 1943.)

Benjamin Franklin: Some Account of the Pennsylvania Hospital (1754): Printed in Facsimile, with an introduction by I. Bernard Cohen. (In the Institute's Bibliotheca Americana Series, Vol. VI.)

Otho T. Beall and Richard H. Shryock, *Cotton Mather: First Significant Figure in American Medicine.* (In the Institute's Monographs Series, Vol. V.) This work was originally published in the *Proceedings* of the American Antiquarian Society, Vol. 63 (1953), 37-274.

Dr. Shryock also published, in the summer of 1953 through the Munksgaard Press, Copenhagen, a brief study entitled *The Unique Influence of the Johns Hopkins University on American Medicine.*

VIII. *Exhibits*

In September, 1953, an exhibit on Leonardo da Vinci was prepared by Dr. Larkey, in connection wth a city-wide tribute in Baltimore. In October, an exhibit of medical and other scientific paintings was presented in connection with the meetings of the Association of Medical Illustrators. The collection featured the work of the late Max Broedel of the Johns Hopkins University.

During the winter, 1953-54, the Rabelais Exhibit, described in the preceding Annual Report, was again presented. In the spring a Lavoisier Exhibit was arranged by Dr. Klickstein and by Mr. Denis Duveen of New York City, all the materials coming from the latter's collections. These consisted of books in their original French editions, portraits, medals, manuscript letters and documents. Many of the manuscripts had never been publicly shown before. The various items were so arranged as to trace Lavoisier's endeavors, scientific and otherwise, from adolescence to his untimely death at the age of 50. The Institute is indebted to Mr. Duveen and Dr. Klickstein for the opportunity of presenting this remarkable collection.

In June, 1954, an exhibit of books on medical history, published during the preceding decade, was arranged by Dr. Klickstein. The collection was a selective one and was intended to show some of the more significant works published since 1944. Items were arranged under such categories as bibliography, biography, special periods, professional fields, and particular countries. The exhibit was presented in connection with a Conference on the Teaching of Medical History, to be noted below. Dr. Arnold H. Eggerth of Brooklyn was kind enough to prepare a list of the works exhibited, and copies of this will be distributed to interested persons.

IX. *Collections and Gifts*

During the year 1953-54, the Institute collections were increased by:

Portraits	166
Pictures	137
Documents	9
Autographs	81
Books	281

We are indebted to Dr. Alan M. Chesney for a large number of portraits of former members of the Johns Hopkins medical faculty, and pictures of the Johns Hopkins Hospital and Medical School in the early days. Miss Frieda Thies presented autographs, pictures, and documents from the estate of Mrs. Elizabeth S. Thies-Meyer. A case of surgical instruments which had belonged to Dr. Richard Harewood Green (1834-1899) was given to the Institute by Mrs. John Green. Mrs. M. H. Brown, of Saranac Lake, presented us with materials relating to Scarpa and also with a manuscript by the late Dr. Lawrason Brown.

Periodicals

Titles subscribed to	22
Titles exchanged	13
Titles—new subscriptions 1953-1954	2

X. *The Johns Hopkins Medical History Club*

The Club held four meetings during the year, two at the Institute and two in the Johns Hopkins Hospital. The officers during the year were Dr. Richard H. Shryock, President; Dr. A. Earl Walker, Vice President; and Dr. Victor A. McKusick, Secretary. The program of speakers during the year 1953-54 was as follows:

October 21, 1953

Prof. Harcourt Brown, of Brown University, "Materia Medica, Gargantua, and Rabelais."

December 7, 1953

Sir Geoffrey Jefferson, University of Manchester, "The Spinal Cord in 1837."

March 3, 1954

Dr. John C. Harvey, Johns Hopkins University, "The Writings of Louis Hamman"; Dr. Charles W. Wainwright, "Dr. Hamman as I Knew Him."

April 20, 1954

Dr. Douglas Guthrie, University of Edinburgh, "The Evolution of Medical Teaching in Scotland."

XI. *Conference on the Teaching of Medical History*

The Institute has long displayed a primary interest in the Teaching of Medical History, not only at the Johns Hopkins University but also in medical schools throughout the country. In the fall of 1951 a Committee on this subject, appointed by the American Association of the History of Medicine, met with other interested persons at the Institute and discussed problems of personnel, subject matter, and objectives in this field. The memorandum drawn up at that time by an editorial subcommittee was later published in the *Bulletin*, XXV (Nov.-Dec., 1951), 571-577.

In view of the interest shown in these discussions, and also in a subsequent survey made of course offerings in the medical schools (*Bulletin*, XXVI, Nov.-Dec., 1952, pp. 562-578), it seemed desirable to call a general Conference on the subject at the Institute on June 10-12, 1954. Some fifty persons who had been active in teaching medical history were invited to participate and about forty of these attended. This number made informal discussions possible, both at the sessions and during the luncheons and dinners provided by the Institute. We were all indebted to Mrs. Robert S. Durling, of the Institute staff, for her careful planning of the local arrangements.

The first session was devoted to the "Place of Medical History in Education." Dr. Richard H. Shryock spoke on "General Education," calling attention to the neglect of the history of science and of medicine in general historical texts used in American colleges. But he also noted a limited but encouraging tendency among younger historians to take a greater interest in these fields.

Dr. Owsei Temkin then read a paper on the place of medical history "In Medical Education"—the major interest of the Conference. He stated that this would be determined by the subject's contributions to the solution of certain problems confronting the medical schools. These are especially (1) the need to humanize the content of medical studies, (2)

the need to understand social factors, and (3) the need to counteract the centrifugal forces of specialization. The so-called Oslerian method of teaching medical history within the various disciplines derives value from its potentially humanizing effect. A formal lecture course on the general history of medicine is also desirable, as a means for showing the essential unity of the field. In order to develop the student's ability to meet historical arguments critically, a seminar may also be added. In short, a lecture course, supplemented by (or combined with) a seminar, side by side with Oslerian teaching, provides the desirable type of program.

At a dinner meeting on June 10, Dr. Iago Galdston, of the New York Academy of Medicine, spoke on "Dark Crannies and Alcoves in Medical History." Dr. Galdston declared that medical history, as actually taught and written over the past hundred years, lacks orientation and is without a definite viewpoint. It does not offer the insights desired, and those proffered are often superficial and prejudiced. As to orientation, there are varied foci of interest but emphasis should really be placed on the relations between the patient and the physician. With regard to insights, the subject has traced events but does not expound their dynamics; it underscores achievement but does not reveal the errors. Hence much of this history represents romance rather than reality. Such superficial treatment can be corrected only by well-trained medical historians, and the central question before us is how to train such historians and how to facilitate their cooperation with scholars in related fields.

The second session, held on June 11, was devoted to "The Principles of Teaching Medical History." Dr. Ludwig Edelstein of Johns Hopkins University, in speaking on "The Teaching of Early Medical History," suggested that the value of Greek medicine lies in its contrasts to modern medicine—rather than in those elements which still seem to have validity. The realization of the "otherness" of Greek medicine, which was nevertheless satisfactory to its times, may correct the self-centered satisfaction with which most students view the present situation. In teaching Greek medicine, attention should be given to problems rather than to personalities, to the contrast between science and art, to the influence of philosophy, and to the implications of classical terminology for modern medical thought.

Dr. Erwin H. Ackerknecht of the University of Wisconsin then read a paper on "The Teaching of the History of Disease"—a subject which he finds will integrate well with other courses. In describing his own course, Dr. Ackerknecht explained that he treats successively the accounts

of different diseases. With regard to each, he deals in turn with (1) the life history of the disease (spontaneous rise and fall, man-made declines, social factors and selective diffusion); (2) the relations between historical processes and diseases (how diseases sometimes make history, but history more often makes diseases); (3) the relations between medical developments and diseases (medicine may influence diseases but the latter, in turn, may provoke new orientations in medicine); and (4) the geography of disease phenomena.

The final paper at this session was given by Dr. George Rosen, of Columbia University, on "The Teaching of Social Aspects of Medical History." Dr. Rosen defined "social aspects" as referring to medicine in its social setting—as an element of a society. This element is functionally related to other aspects of society, all of which are in a process of continuous change. Every factor in medical history—patient, physician, theory, practice, prevention, diagnosis, and treatment—must be integrated and the whole in turn related to the surrounding social environment. In this way, the student can be given a sense of order and direction. The materials can be presented in a more meaningful way than if medical history is treated as a theme isolated from its social context. This approach implies consideration, for any given time and place, of the general culture of a people, their health problems, the nature of the profession which dealt with these problems, the medical theory and practice employed, and the advancement of medical knowledge. Throughout such an analysis, heed should be accorded the ways in which the society influenced medicine, and to the means by which medicine itself influenced society.

A second session on June 11 was devoted to "Experiences in Giving a Course in Medical History." Doctors H. E. Rawlinson of the University of Alberta, Walter Riese of the Medical College of Virginia, Lloyd G. Stevenson of the University of Western Ontario, and Ilza Veith of the University of Chicago, reported on their respective experiences. Dr. Rawlinson has found it best to follow a "case history method" of presentation, in which he begins by reviewing briefly each general historical period, and then relates to this an intensive discussion of the growth of knowledge in regard to the respiratory and vascular systems. In the course of this analysis, he emphasizes the utility of the historical approach "in meeting today's problems"; for example, in showing by historic examples how decision on the use of laboratory aids can be made wisely rather than in terms of clichés or dogmas.

Dr. Riese offers a general course which is compulsory for the second-year class, but no examinations are given. The cooperation within his College has been excellent. He emphasizes " those periods and discoveries which finally emerged as anticipations of the present state of medicine "; but, in the process, gives attention to certain recurrent dialectics, such as observational versus experimental medicine or humoral versus solid pathology. Especial attention, finally, is given to the history of medical ethics.

Dr. Stevenson, commenting on schematic formulations or outlines for a course, viewed them as useful if employed with caution but noted the danger that they could be memorized by students who recalled little of the real content of discussions. This is made clear by examinations, which are generally valuable in revealing the instructor's failure to communicate and the student's frequent inability to understand. Without tests, the instructor may never know where his failures lie. The lecturer, he added, will find a text book as well as examinations extremely helpful. Dr. Stevenson hopes to use, in this connection, a new edition of Dr. Sigerist's *Great Doctors* or a possible, brief text by Dr. Ackerknecht.

Dr. Veith described her general program at Chicago, emphasizing the specific arrangements and procedures. In each quarter there is offered (1) a lecture course surveying the whole field or, in some cases, the history of a special discipline, (2) a seminar, in which active student participation is required, and (3) introductory lectures given in connection with orientation or established courses in other departments of the medical school. Courses in medical history are given as electives in competition with all other electives, and one or two credit points can be secured in taking them. Most of the students enrolled come from the medical school, but a few attend also from the Social Science Division of the University. Medical students often acquire an interest in the field which promises to be permanent, but students coming over from history usually limit their interests to the immediate subjects of their graduate theses.

On the evening of June 11 a dinner meeting was addressed by Dean Jean Curran of the School of Medicine of the State University of New York. Dr. Curran spoke on the " Development of Programs in Teaching Medical History." He recalled that a recent survey, directed by Dr. D. A. Tucker of the University of Cincinnati, revealed that only about half of the medical schools in the United States and Canada record lectures on the subject in their catalogues. The impression is received that instruction

in medical history does not reach the majority of medical students. In view of this, Dr. Curran requested both the faculty and the undergraduate Medical History Club to suggest what steps, if any, should be taken in this area in his own school. Faculty members recommended that lecture courses be avoided, but approved the collection of a pertinent library under the direction of a professor of medical history. Such a professor could provide seminars for students and assist other faculty members in relation to specific historical interests. Various other suggestions were received, relating chiefly to particular themes which should be stressed in commenting on the historic backgrounds of established courses. The student group, meantime, urged that "an orientation series" in medical history be provided in the first year; and added that the faculty should aid the students by providing knowledge of such themes as the rôle of the doctor in society, and the evolution of medical education. They also advocated medical biography for its inspirational values. Dr. Curran concluded that, as a result of these replies, he hoped the School could conduct an experiment in the incorporation of medical history in the curriculum, at a time when medical education is being recast throughout the country.

The final session, devoted to a "Symposium on Aids to Teaching," was held on the morning of June 12. Miss Genevieve Miller, of the Cleveland Medical Library, opened the discussion by speaking on "The Medical Library." Miss Miller pointed out that "medical libraries by their mere existence tend to initiate medico-historical studies," and illustrated this by reviewing the development of the Cleveland Medical Library Association. This institution, founded in 1894, acquired rare books, sponsored historical publications, and housed an extensive historical museum collected by one of its members. Recently, Miss Miller has been added to the staff of the Library and also to the faculty of the Western Reserve School of Medicine. Her functions are to further stimulate interest in the field by organizing an historical society, by editing a quarterly journal, and by offering courses at the University.

Miss Gertrude L. Annan, of the New York Academy of Medicine, then spoke on "Rare Books and Exhibits." Miss Annan reviewed the experience of the Academy with historical exhibits and declared frankly that scholarly collections which reveal the growth of knowledge are largely ignored. It is therefore the present policy there to concentrate on two types of exhibits. The first of these is the small display in honor of a particular person, publication, or institution—such as ones relating to the Ehrlich centenary, the centenary of the publication of Beaumont's great

work, or the fifty-year celebration of the Rockefeller Institute. The second type is the large exhibit made up chiefly of illustrations. The subjects selected, such as pathologic anatomy or public health in New York, are those which lend themselves to this kind of display. Most students, Miss Annan believed, derive little from exhibits unless they take part in selecting and arranging the materials. This experience involves learning by doing, and may well impart a feeling for history and an accuracy in dealing with it.

The final paper, read by Dr. Robert W. Prichard of Wake Forest University, related to "Visual Aids." Dr. Prichard observed that the use of such aids had become a standard procedure. Those having museums may display materials first-hand; others must depend on lantern slides or other photographs. There is no clearing house for lantern slides: most people make their own. The only set available for purchase is a collection of 35 mm. black and white illustrations from the Mettler text, sold by the Clay-Adams Company of New York. Motion pictures relating to medical history are rare, but Dr. Prichard announced that he was preparing a list of these.* No film strips on medical history have been located, although this would be a convenient form in which to have materials if they are to be mailed about. Dr. Prichard suggested, in conclusion, that the American Association of the History of Medicine might well set up a Committee, whose duty would be "to promote the centralization of visual aid materials for loan, and to advise and stimulate the production of motion pictures and film strips in particular."

Following the end of the last session, those present were given an opportunity to view the Harvey and Welch films in the Hospital Auditorium, prior to a final luncheon. It may be added that the Institute staff, responsible for planning the meetings, was encouraged by the representative character of those who attended and by the manner in which nearly everyone entered into the informal discussions which followed each paper. There was frank recognition of the weaknesses as well as of the merits of medical history; but the very presence of forty persons from many schools throughout this country and Canada was evidence of the subject's appeal. No conclusions were reached and no resolutions adopted. It is hoped that a good time was had by all.

RICHARD HARRISON SHRYOCK.

* Since published in the *J. Med. Educ.*, vol. 29 (Oct., 1954), 56 f. This list includes 13 films which can be either loaned, rented, or purchased.

CORRESPONDENCE AND REPORTS

THE HISTORY OF MEDICINE IN VIETNAM: PIERRE HUARD

The first part of the title to this article may mean two different things; it may refer to the general history of medicine as studied in Vietnam, or to the growth of medicine in that country. It may be understood as (History of Medicine) in Vietnam or History of (Medicine in Vietnam).

In this case, the title has actually both meanings. Dr. Pierre Huard, professor of surgery, director of the Anthropological Laboratory and dean of the Faculty of Medicine of Hanoi, has taken considerable pains throughout the years to explain the importance of historico-medical studies. He has written many memoirs himself and inspired Vietnamese students to follow his example. He was concerned, in the first place, with the history of medicine in general, which is chiefly Western medicine, and in the second place, with Chinese and Indochinese medicine.

His studies of the first kind dealt with Aristotle, Descartes, Cuvier, von Baer, Haeckel, Weismann and most recently with Aldobrandino of Siena; he also prepared a biographical index for the study of western biology and medicine; all that is very valuable for the Vietnamese physicians but of no importance to Western scholars. We do not expect a scholar investigating Aldobrandino in Hanoi [1] to bring us any novelties on the subject. Library facilities in Hanoi cannot be very large and yet they should not be underestimated. For example, Dr. Huard found a copy of Antoine Colin's French translation (Lyon 1602) of Clusius' edition of the treatises of Garcia da Orta, Cristobal de Acosta and Nicolas Monardes (Antwerp 1593) in the Library of the EFEO in Hanoi.[2] That is a very rare book which it would be difficult or impossible to obtain in America.

The Anthropological Laboratory of the Faculty of Medicine of Hanoi conducted a series of investigations which concerned directly the Vietnamese people, but were of international interest. For example, how far has the skeleton been affected by age-long squatting down? [3] Dr. Huard described and discussed the habit of teeth blackening which is common not only in Indo-China but also in other parts of the Far East and in many eastern islands (Sumatra, Java, Timor, N. Japan, the Marianas and the Solomon Islands).[4] That territory is the habitat of the arecanut palm and of the Piper betle (Linn.) both of which are necessary for betel-chewing, another characteristic custom.[5]

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[1] P. Huard: Le premier livre de médecine écrit en français (*L'Extrême-Orient Médical*, 6, no. 3, 49, 52, Hanoi 1953).

[2] Ecole française d'Extrême-Orient, *Isis*, 41, 346.

[3] P. Huard: Le squelette humain et l'attitude accroupie (*Bull. de la Société d'études indochinoises*, undated reprint, Saigon, 1951 or before).

[4] P. Huard: Le noircissement des dents en Asie Orientale et en Indochine (*France-Asie*, nos. 28-29, 18 pp., Saigon, 1948).

[5] N. M. Penzer: The romance of betel-chewing, in his *Poison-damsels* (pp. 187-300.

The most valuable contributions, however, are those relative to Vietnamese medicine. That medicine is of two kinds: the "Northern medicine" coming from China and the "Southern one" which is purely Vietnamese, or let us say, wherein the Chinese elements are less conspicuous. Chinese medicine is exceedingly systematic and represented by a large literature;[6] some at least of the Chinese books existed, either in the Chinese original or in Indochinese translations,[7] in the libraries of almost every Indochinese doctor. Buddhist medical ideas were included in the Chinese Buddhist literature; there was also an oral and manual tradition coming straight from India, Ceylon or Burma. The Buddhist leader of the Khmer empire, Jayavarman VII (1181-1215+) built many hospitals and established medical assistance throughout the empire.[8] Buddhist pilgrims carried those ideas down to the coasts.

This introduces the subject of colonization which is today the cause or the pretext of so much hatred in Asia and Africa. I am not by any means a defender of it and feel that every nation has an inherent right to freedom. The fact remains that colonization has been throughout the ages one of the main vehicles of civilization. Not to go too far back in the past, it is certain that the natives of Spain, France and England were raised to a higher cultural level by Roman colonization. While the conquistadores of various nations were trying to conquer and colonize foreign lands to exploit the material goods and the very bodies of the natives, other men were trying to conquer their souls. By so doing, however, they were instrumental in transmitting cultural ideas of many kinds. Europe was thus civilized by Christian propaganda; all the countries surrounding the Mediterranean basin were civilized by Christendom and also by Islam; Eastern Asia was civilized by Buddhism. Religious propaganda was always enmeshed in various ways with political and economic colonization.

The people of South Eastern Asia or (as I prefer to put it) Indo-China were colonized by India and by China or submitted to their overwhelming influence, which has never ceased to act until today (that is why the term Indo-China is very appropriate). Later, they were colonized by France and many of them converted to Christianity.

Medicine as practised by well-to-do people in the cities is essentially Western in French form, but Chinese and Vietnamese medicine have not lost their ground, and

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London, Sawyer, 1952). Betel-chewing darkens the teeth but the blackening is produced by another technique described by Huard in his paper on the subject.

[6] Some idea of Chinese medicine may be obtained in my *Introduction* passim by means of the table of contents and of the index. The Sino-Japanese index covers 56 pages (pp. 2100-55). For generalities, see *Introd.* (3, 259-63, 1218); for moxa (2, 78), for acupuncture (3, 906, 1851). An elaborate account will eventually be available in vol. 6 of Joseph Needham: *Science and Civilization of China* (Cambridge University Press). Vol. 1 was published in 1954 (*Speculum*, 1955).

[7] For these translatons and other Indochinese medical publications, see Henri Cordier: *Bibliotheca indosinica* (5 vols., 1912-32). *Introd.* (3, 1879). Cecil Hobbs: *Southeast Asia, 1935-45. A selected list of reference books* (86 pp., Library of Congress, Washington, D. C.).

[8] Lawrence Palmer Briggs: *The ancient Khmer empire* (Philadelphia, 1951; *Isis* 42, 263-65).

maybe will never completely lose it. Consider, for example, the case of drugs. Most of the drugs of the Vietnamese or Indochinese pharmacopoeia are the same as Chinese drugs, but there are also, as we would expect, many local additions.[9] This does not mean that the very drugs come from China; some do but others are cultivated in Indo-China and exported to China (e. g., cinnamon, cardamom aloe, agalloch); others are properly Indochinese, that is, their use is restricted to Indo-China. One of the most amazing facts in human experience is that almost every nation, however primitive, has managed to explore the pharmacopoeical possibilities of its own territory. The Chinese discovered ginseng, chaulmoogra, ma huang (ephedra); the Indians of Peru discovered cinchona and those of Brazil, ipecac, etc. This is really marvellous, because each of those discoveries implied innumerable experiences, stretched over centuries of time. It is quite possible that just as our pharmacists developed quinine out of cinchona and emetine out of ipecacuanha, they might make other discoveries in the native pharmacopoeias of India, China and Indo-China. One more remark on this subject. The Chinese (like the Romans) were never satisfied with their own drugs but exported many more from their "colonies" or from foreign countries. One of their most valued drugs was (and is) Siberian panti (reindeer antlers); Dr. Huard suggests that the pharmacodynamic properties of panti may be explained in terms of hormones.

I do not have all of Dr. Huard's memoirs before me as I write, but I have many, presumably the most important of which he very kindly sent me copies during the last five years. Let me quote them: La science et l'Extrême Orient (folio, 67 pp., *Cours et conférences de EFEO 1948-49*); Les chemins du raisonnement et de la logique en E. O. (26 p., *Bulletin de la Société des études indochinoises*, vol. 24, 1949); L'E. O. en raccourci (15 pp., *ibidem*, 1949); L'E. O. et la chirurgie (undated folio, pp. 13-16, 1950?) Lān-Ōng et la médecine sino-vietnamienne, in collaboration with Maurice Durand (*Bull. de la Société des études indo-chinoises*, 28, 221-302, 1953). Lān Ōng (born 1720, died after 1782) was the greatest physician of Vietnam and his works entirely written in Chinese are very bulky. Dr. Huard names him in the Vietnamese manner, but happily he also gives the Chinese characters which, in this case, would read Lan Wèng (Giles nos. 6751, 12667),[10] meaning "lazy gentleman." This memoir analyzes Lān-Ōng's medical encyclopaedia in 26 quiyēn (chüan), discusses his views on anatomy, physiology and pathology, diagnosis, therapeutics, surgery, medical ethics. All that is essentially Chinese and the diagrams are similar to those illustrating Chinese books.[11] Huard's memoir is completed with 311 notes (including the Chinese characters) and an elaborate bibliography in Western and Far Eastern languages. This is the book to begin with, if one wishes to investigate Vietnamese, or more generally Indochinese, medicine.

In addition to his own studies, Dr. Huard has encouraged some of his medical

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[9] Albert Sallet: *L'officine sino-annamite en Annam* (Paris 1931; *Isis* 22, 267-72). Other books of the same kind relative to Bali and the Malay peninsula are listed in my *Introd.* (3, 1176).

[10] I shall not give the Giles' transcription of the other Chinese characters. The readers who are interested can find the characters in the books dealt with in this article.

[11] E. g., the diagrams published in *Isis* (14, 258, 260, 1930).

students to investigate their national literature, and as a result, a series of theses have been published either in French or in Vietnamese with French summaries. An enumeration of those known to me (most of them in my possession) follows; all were published in Hanoi (except when another place is mentioned).

1. Huard and Do Xuan Hop: *Un peu de médecine chinoise* (1944).

2. Pham-Ba-Cu: *La médecine chinoise à travers les âges* (Paris, 1944).

3. Pham-biêu-Tam: *Introduction de la médecine occidentale en Extrême-Orient* (1947).

4. Li-Hong-Cheong: *Documents concernant l'histoire de la médecine recueillis à Hanoi* (1947).

5. Duong-Bá-Bânh: *Histoire de la médecine au Viet-Nam* (86 pp., folio 1947; *Isis* 41, 380). This includes a list of Chinese medical books in the library of EFEO.

6. ————: Documents concernant la médecine vietnamienne (*L'Extrême-Orient medical*, 2, no. 3, 13-38, 1950).

7. ————: Bibliographie européenne concernant l'ancienne médecine vietnamienne (*ibidem*, 39-53, 1950).

Dr. Duong-Bá-Bânh (1920-51), director of the school for midwives in Hanoi and lecturer at the Faculté, was killed accidentally on 7 July 1951 on his way to the Congress of Gynaecology held in Nice. French and Vietnamese biographies of him appeared in *Extrême-Orient médical* (vol. 4, 151-54, 1951).

8. Tran-Ngoc-Ninh: L'éthique médicale dans la médecine traditionnelle du Viet-Nam (*ibidem*, vol. 3, no. 4, 64-86, 1950).

9. Nguyen-Tran-Huan: Contribution à l'étude de l'ancienne thérapeutique vietnamienne (*EFEO, Bibliothèque de diffusion*, 92 pp., 1951).

This bibliography is certainly incomplete; for one thing, the vicissitudes of war stopped the publications, or if not, the mailing of them to me, but is sufficient to indicate the great efforts made in Hanoi under Dr. Huard's guidance.

I am writing these notes at the very time when Hanoi is being evacuated by the French. The Vietnamese army entered the conquered city on 7 Oct. 1954. This is the end of a terrible war and the beginning of Vietnamese independence, but we must always remember that even when political independence has been won economic independence does not exist ipso facto, and spiritual independence remains unobtainable. For in spiritual matters even more so than in material ones, every nation is dependent upon the others.

The French had lifted Indo-China to a higher cultural level, even as Russia lifted Siberia. In both cases, the main motives of the colonizers were political and economic, but they could not help bringing with them innumerable gifts.

Whatever the shortcomings of the French administration may have been, the French doctors and the scholars of EFEO deserve no blame but only the highest praise. The "Faculté mixte de médecine et de pharmacie de l'Indochine"[12] was

[12] "Faculté mixte" refers to the fact that the professors, assistants, laboratory workers, etc. were partly French and partly Vietnamese. The Vietnamese personnel was constantly increasing.

accomplishing a gigantic and heroic task in introducing medicine, medical education and public health in Vietnam. American readers may have formed some idea of the size of that task by reading Dr. May's book, *Siam doctor*.[13] That book deals with Siam or Thailand, but medical conditions are not essentially different East of the Mekong River. His main conclusion was:

"No modern state can be built in any tropical country, no democracy can be installed, until the people are restored to a minimum of power and health. At present the problems of preventive medicine and education exceed every other. It is a painful joke to speak of freedom and self-government when the intelligence of ninety-nine percent of the population is obscured by chronic anemia and disease. Political agitators thrive on such ignorance and impotence. Their exploitation of the people, as soon as they get into power, will be as great as that of the imperial colonizer. Indo-China does not belong to France, nor Java to Holland, nor Burma to England. All of these countries are under the domination of far more tyrannical rulers, the intestinal worm and the blood parasite. As long as the nations of the world do not co-operate in destroying these despots, any political structure erected in these regions will be a cynical farce of which the people will be the silent victims."

As to EFEO (the Ecole française d'Extrême Orient), it is an institute devoted to the study of Indochinese archaeology, history and culture. It was served by a team of Indianists, Sinologists, archaeologists, prehistorians without equal in the world. Its publications, mainly the *Bulletin EFEO* (begun in 1901), constitute a library of Asiatic and Indochinese knowledge of supreme value. The servants of the EFEO were almost exclusively French, but that was so only because the Vietnamese had not yet obtained enough learning, discipline, method and maturity to share in the work.

While we rejoice in Vietnamese independence, let us hope that the victorious people will not only allow the Faculté mixte and the great archaeological institute to continue their fundamental tasks but will facilitate them in every way. The medical school is absolutely necessary for the welfare of the country, and its standards must be kept as high as possible; if one permitted them to go down, it would be almost impossible to lift them up again. The task to be accomplished by the archaeological institute is less urgent but as important for the glory of the nation and the souls of the people, as public health is for their bodies.

It would be very foolish and almost suicidal for Vietnam to cut off French culture and language which is (even as English in India) its main bridge to the Western world. The French books (as the English books in India) do not bring only French science (or English science) but the whole of Western science. Vietnam cannot reject Western science, except to its own peril and damage.[14]

Excessive reliance on their own language as a vehicle of culture would be more dangerous to them than overemphasis on Hebrew to Israel. Thousands of people are able to write or read medicine or science in Hebrew, while the number of Indochinese people capable of producing a scientific literature in their own language, of

[13] Jacques M. May: *Siam doctor* (255 pp., Garden City, N. Y., Doubleday, 1949).

[14] My point of view is neither French nor Indochinese but purely human.

keeping it up-to-date (if that were possible) and of using it, will remain for a long time exceedingly small. Moreover, it is not too difficult for outsiders to learn Hebrew, while few Western scholars will ever be able to study the Indochinese languages sufficiently well for easy communication.

To return to Dr. Pierre Huard and his collaborators, they were the most faithful servants of Vietnam as well as of France, and above all, of humanity. I did not hear so much of them during recent years because of the war; books did not come from Hanoi any longer, but the less I heard from them the more I was concerned. According to the newspapers (not to his own statements), Dr. Huard played a merciful role in the exchange of wounded and sick prisoners when the fighting was over.

Every good wish to him, to Vietnam, and especially to the Faculté mixte de médecine and the EFEO.

GEORGE SARTON

19 October 1954

P. S. This article was already written and sent to the *Bulletin* when I received a long letter from Dr. Pierre Huard, dated Hanoi, 26 October 1954. The following information taken from it may interest our readers.

At the request of the French Government and of the Vietnam Government, Dr. Huard has decided to remain in Vietnam to take care of the Cancer Institute and of St. Paul's Clinic. These two institutions are functioning normally. The U. S. Consul and the Apostolic Nuncio have also remained in Hanoi. On the other hand, the majority of physicians of the Hanoi Medical Faculty and the majority of students have chosen to leave and are now in Saigon, living miserably in tents or in provisional lodgings. This includes Dr. Tâm who visited us in Cambridge a couple of years ago. Routine work is going on, but the scientific activities are jeopardized. Dr. Huard and the colleagues who decided to stay with him are optimistic, however, and full of courage and patience. May their efforts be crowned with success, not only for their sake but for the sake of public health, physical and mental, in Vietnam!

At the time of proofreading I received from Lt. Col. Claudius F. Mayer, MC-USAR an article entitled Vietnam Medicine (*The Military Surgeon* 115, no. 3, 198-205, Sept. 1954) which supplements my own.

G. S.

ANNOUNCEMENTS

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

Twenty-eighth Annual Meeting: Detroit, May 12-14, 1955

The next annual meeting of the American Association of the History of Medicine will take place on Thursday, Friday, and Saturday, May 12, 13, and 14, 1955, at Detroit. The Park-Shelton Hotel at Woodward and Kirby Sts., Detroit, will serve as the headquarters hotel. Dr. Alfred H. Whittaker is Chairman of the Committee on Local Arrangements and Entertainment. Dr. Erwin H. Ackerknecht is Chairman of the Program Committee. Wives and guests of the members of the Association will be welcome at the meeting and the various entertainments and social activities now being planned.

The program will feature two symposia, one on philosophy and medicine, and one on the history of hospitals. There will be general sessions with miscellaneous papers, and members who want to present papers at these sessions are invited to contact Dr. Erwin H. Ackerknecht, University of Wisconsin Medical School, Madison 6, Wisconsin.

Officers, Committees, and Delegates of the American Association of the History of Medicine, Fall 1954

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* Died on August 2, 1954.

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NATIONAL NEWS

American Academy of the History of Dentistry

The Academy held its third annual meeting on November 5 at the McAllister Hotel, Miami. John E. Gurley was chosen president-elect, and William N. Hodgkin was installed as president. Harold L. Faggart, Milton B. Asbell, and G. B. Denton remained as secretary, vice-president, and editor respectively.

Baltimore

The Johns Hopkins Medical History Club held its first meeting of the academic year on October 25, 1954, with papers by Curt P. Richter ("History of the dermatone concept") and Leo Kanner ("The historical perspective in psychiatric instruction"). The second meeting is planned for November 29, 1954, with an address by Richard W. TeLinde on Howard Atwood Kelly. The officers for the year are: A. Earl Walker, President; Victor A. McKusick, Vice-President; John C. Harvey, Secretary. Owsei Temkin is the delegate to the American Association of the History of Medicine.

Chicago

The Society of Medical History of Chicago announces an open meeting for November 10. Speakers are Lester R. Dragstedt ("The father of Chicago medicine"), Ilza Veith ("Plague and politics"), Simon Rodbard ("The heart scarab of the ancient Egyptians").

New York

The New York Academy of Medicine, Section on Historical and Cultural Medicine, has announced plans for a centennial celebration of the birth of William Crawford Gorgas for November 10, 1954. Stanhope Bayne-Jones is to speak on "General Gorgas as I knew him," and Wilson George Smillie and Edward I. Salisbury are to discuss the paper.

The Mount Sinai Hospital will resume the seminars on the history of surgery on October 20. The topics will ge: "Treatment of scoliosis from Hippocrates to Hibbs," Milton Glickstein (Discussion: Alvin M. Arkin), and "Sepsis, asepsis, and antisepsis through the centuries." Stuart Denmark (Discussion: Gregory Shwartzman).

Philadelphia

The Section of Medical History of the College of Physicians of Philadelphia is again sponsoring a course in medical history for the students of the medical colleges of Philadelphia. The six lectures are given on Monday evenings, October 18-November 22, 1954, by Richard H. Shryock and Owsei Temkin of the Johns Hopkins Institute of the History of Medicine.

On November 5, 1954, the Section on Medical History of the College of Physicians and the Philadelphia Neurological Society will join in a symposium on the observation of the 125th anniversary of the birth of Silas Weir Mitchell. I. S. Wechsler will speak on "S. Weir Mitchell, the neurologist," and Ernest Earnest on "S. Weir Mitchell, the man of letters."

Washington, D. C.

The Smithsonian Institution announces the opening of a new exhibit entitled "A Telegram from Your Heart," which traces the evolution of the electrocardiograph. The exhibition, which will be permanent, opened in conjunction with the Second World Congress of Cardiology meeting here in Washington, September 12-17. Besides tracing the technological evolution of the electrocardiograph from Einthovens' 1903 string galvanometer to the modern counterpart, the Smithsonian exhibit describes to its one and three-quarter million annual visitors the importance of this instrument in medicine today. The exhibit is located in the medical gallery of the Smithsonian's Arts and Industries building, 9th and Jefferson Drive, Washington.

NEWS FROM ABROAD

Italy

Professor Loris Premuda has been appointed to the chair of the history of medicine at the University of Padua formerly filled by Professor Arturo Castiglioni.

BOOK REVIEWS

Index zur Geschichte der Medizin, Naturwissenschaft und Technik. Im Auftrag der Deutschen Vereinigung für Geschichte der Medizin, Naturwissenschaft und Technik unter Mitwirkung von Johannes Steudel (Geschichte der Medizin), Willy Hartner (Geschichte der Naturwissenschaften), Otto Mahr (Geschichte der Technik) herausgegeben von WALTER ARTELT. Erster Band. München und Berlin: Urban & Schwarzenberg, 1953. viii + 398 pp. Ill. D. M. 51.00.

The *Mitteilungen zur Geschichte der Medizin, der Naturwissenschaften und der Technik*, which at the time of its inception, in 1902, was the most important bibliographical tool for the history of medicine and science, succumbed to World War II. This meant that the history of medicine was left without a comprehensive guide to the ever increasing literature in the field. Fortunately, the German Association for the History of Medicine, Science, and Technology, in 1948, the year of its organization, decided to find a successor to the *Mitteilungen*. The *Index*, whose first volume covers publications during 1945-48, is now before us.

It is quite understandable that the editors concentrated upon the years immediately following the war. Their courage to undertake the task and their perseverence in completing it under most difficult circumstances are truly remarkable. Thanks are due to the editors and their assistants, Anneliese Wittmann (Medicine), Hertha van Dechend (Exact Sciences and Technology), and Claus Nissen (Biology). Since foreign bibliographies often had to be relied upon, misspelling of names and other inaccuracies were unavoidable. Of such shortcomings the editors themselves were well aware, but they wisely decided that the appearance of the volume was more urgent than perfection in detail.

In contrast to the *Mitteilungen*, the *Index* does not carry abstracts or reviews. This allowed broader coverage on less space, and the editors were right in giving priority to the mere gathering of titles. Undoubtedly, this policy will have to be followed until the backlog of past years has been worked up. Nevertheless, this procedure also poses a problem. Serious work in any discipline requires a knowledge of the literature. In the history of medicine, publications are dispersed over so many places that their assembly in an Index is of immense help. But the assembly of titles leads to another question: Which of the contributions are worth reading? The more complete the coverage is, the more formidable this question looms. According to the figures presented in the preface, during 1945-1948 the publications in the field of the history of medicine alone amounted to 7022 items. It is safe to assume that since then the figures have not decreased. Obviously there is no exact objective measure for the value of a contribution. But to all practical purposes, a great service might be done if the *Index*, at some future time, could strike a happy medium between its present policy and that followed by the *Mitteilungen*. For example, a line, indicating that an article contained nothing new (and we all know that there are still too many articles of this kind printed) might make it unnecessary to interrupt one's work till a worthless article in a hard to obtain journal had been

seen. Of course, this presupposes a large number of co-workers as well as more space for current publications. In other words, it will only be feasible when the *Index* can devote itself to the most immediate publications.

The present volume also contains three contributions by Robert Herrlinger, Paul Adolf Kirchvogel, and Günther Kerstein. All three articles are excellent, yet one may wonder whether it would not be better in future to omit original contributions so that either more space can be allotted to the bibliographical part or the price can be reduced.

The above suggestions are an expression of the interest that all historians of medicine are bound to take in the *Index*, and of their hope that the next volumes will soon be forthcoming.

OWSEI TEMKIN

ROBERT MONTRAVILLE GREEN. *A Translation of Galen's Hygiene* (*De sanitate tuenda*). With an introduction by HENRY E. SIGERIST. Springfield, Illinois: Charles C. Thomas, 1951. xxvii + 277 pp. $5.75.

This book recalls a memorable event: the first of the Heath Clark lectures delivered in 1952 at the London School of Hygiene by Sigerist. This lecture took as its topic Galen's "Hygiene" and Preventive Medicine, and in an unforgettable way painted the picture of ancient medicine before a crowded and spellbound audience. Many of those present will be particularly grateful that, in the present book, a full translation—the first into any modern language—of Galen's treatise on the subject has been given. Indeed it is "referendus inter Galeni optimos atque elaboratissimos libros quos, monente nostris adhuc temporibus Tissoto, nemo medicorum fuerit adsecutus"—as Ackermann says (published in Kühn's edition, vol. 1, 1821, p. cxxxv, No. 65). The appeal which it had to the great humanist physicians, such as Linacre, Torinus, Winther of Andernach, Caspar Hoffmann, and many others is as fresh as ever,—at a time when specific therapy is paramount and all too little attention is given to the maintenance and preservation of a healthy body. In this treatise, Galen shows up at his best—a cool and rational observer with not more than a modicum of scholasticism; even where he distinguishes seven forms of fatigue (p. 114) we find his deductions not unconvincing. The pains which he takes in choosing the right oil to be used for the massage of a fatigued person (p. 117) are characteristic of the spirit and merits of the book and its author—in a fatigued person with an "ulcerous" sensation which arises from acidity of excrements, Galen says "it is necessary to eliminate the excrements, and the discomfort is ended. And they will be eliminated by much gentle massage with oil having no astringency, especially such as Sabine oil. But most unfavourable to this condition is the oil from Spain and Iberia, which they call Spanish oil, and so-called olive oil or crude oil, which in a word is altogether bitter and unsuitable. It is possible to differentiate their property by tasting, even if you have not tried them before. For thus once in Macedonia I tasted the oil coming from Aulis above the Strymon, and recognized that it is of the same property as the so-called Spanish oil." The book is full of observations which probably have never been put to a

scientific test in the modern sense but might well deserve this: for example, the injunction given in the prevention and cure of stone, where it says that flesh from fowls shut up in the cities and fattened by the dealers with much moist food is most unsuitable for these patients. But the best flesh for such conditions is that of partridges and, next, that of woodcocks, starlings, thrushes, and turkeys. But those thus affected must be forbidden the use of milk of all animals except that of asses, since this is thinner than the others. The reason given for these injunctions is that the forbidden meat contains too much of a glutinous and drying-out matter.

The book is beautifully produced and introduced by a masterly appreciation of Galen from the pen of Sigerist, and the life of Galen, translated by Sidney Licht from Daniel le Clerc's *Histoire de la Médecine*. The translation of the Galen text is eminently readable.

W. PAGEL

ROBERT M. GRANT. *Miracle and Natural Law in Graeco-Roman and Early Christian Thought*. Amsterdam: North-Holland Publishing Company, 1952. 293 pp. $4.50.

The term natural law is here used not in the sense of moral law but of the physical law of the universe. The first section is a lengthy and learned discussion of the many and varied senses in which the term nature was employed in antiquity. The notion of a law of nature in the physical sense arose much more slowly than in a moral sense. The earliest example of the former appears to be in the works of Philo of Alexandria.

The Greeks commonly believed in the eternity of matter and lacked the Hebrew picture of the sovereign God who called non-being into being. In that sense their thinking moved in the direction of an immutable law of physical nature. With this miracle conflicts. The Greek enlightenment applied criticism to the miracles of the mythologies. Nevertheless, the pagan world in the Christian era waxed in credulity.

Early Christianity was indifferent to natural science and called for no rational proof of miracle. The one who first drove the Christians to construct a rational theology is claimed to have been the pagan physician Galen.

Christians, because they assumed the creativity of God, had no a priori objections to miracles. The apocalyptic mood indeed required miracles as signs of the coming of the Lord. Yet, the kind of miracles in which the Christians believed were not specifically Christian and can be paralleled in pagan sources.

The concluding section discusses the meaning and value of the miracle story. It is a testimony to the power and freedom of God. It is not to be regarded as itself an evidence of a skepticism indicating that faith needs bolstering. It is not to be ruthlessly discarded as unscientific. It is a symbolic way of stating the power and freedom of God. The Christians were unfortunately too much under Greek influence to avoid rationalizing their own myths. They were the heirs of two world views and lived in perpetual tension between them.

The historian of science will find here an immense amount of detailed information about the world views of the ancients and belief in particular miracles.

ROLAND H. BAINTON

H. J. ZIMMELS. *Magicians, Theologians and Doctors.* Studies in Folk-medicine and Folk-lore as reflected in the Rabbinical Responsa (12th-19th Centuries). London: Edward Goldston & Son, Ltd., 1952. vii + 293 pp. 21 shillings.

That the extensive literature resulting from the replies written down by rabbinic authorities from the twelfth century onward, in answer to questions of civil as well as ritual law, ought to constitute a rich mine of information, not only for the student of Jewish history in general but also for the medical historian, is too obvious to require demonstration. Just as a lawyer, who argues cases before a jury, must acquaint himself, in order to prove his points effectively, with the general nature of the matters involved, so these interpreters of Jewish practice during the past 800 years, in discussing the problems that were submitted to them for solution, were often compelled to touch upon medical theories and usages that were current in their day. He, therefore, who goes through this literature with a fine comb, for the purpose of gleaning from it whatever might interest the historian of medicine and the student of folk-lore, renders a great service to the furtherance of both these branches of human knowledge. Dr. H. J. Zimmels, Lecturer in Rabbinics and Jewish History at Jews' College, London, gives evidence, in the more than 100 pages of notes on 167 pages of text of his essay entitled *Magicians, Theologians and Doctors*, of being well equipped for the task; and the material he presents is a useful contribution to the study of folk-lore and folk-medicine. But that is about all that can be said in favor of the author and his handiwork.

Leaving aside the deficiencies of style, which in scholarly works of this type are of only secondary importance, the chief fault from which this volume suffers, which greatly reduces its usefulness, is poor organization. No attempt is made at the classification of the sources according to time and place, although it is now almost axiomatic that the differences in worldly culture between such Jewish communities as those of Spain and Germany in the Middle Ages and those of Italy and Poland during the Renaissance were very great. Furthermore all kinds of subjects are introduced that have no place in a book that is supposed to deal with "magicians, theologians and doctors." For example a discussion of the medical aspects of circumcision (p. 161), is followed by a listing of the titles conferred upon the person holding the child during the operation. Again in a section devoted to therapy by bathing (p. 131), the dread of the act of *halizah*, the release given to the widow of a brother who died without issue that is required by Jewish law where levirate marriage is refused, suddenly makes its appearance.

Since the author mentions in his bibliography Julius Preuss's *Biblisch-Talmudische Medizin* (Berlin 1911), why did he not use the arrangement and method of that excellent handbook, which covers the same subject for the biblical and talmudic periods, as a model in his treatment of a later era? Also he would have been much more effective if he would have omitted all the extraneous material, if he would have stripped off the husks and left the kernels.

In short, while Dr. Zimmels' industry and erudition have presented us with a mass of interesting facts about the theory and practice of medicine as reflected by the rabbinic responsa of eight centuries—the superstitions prevalent during that time among Jews have already been described much more systematically by Joshua

Trachtenberg—there is much to be desired as far as the form of the presentation is concerned. Also he might have done more research than he did into the etymology of the technical names that he cites from his sources, many of which he lists without any explanation. For that, however, he would have needed the aid of a philologian and a physician, and apparently he is neither.

SAMUEL ROSENBLATT

ANTONII BENIVIENII *De Regimine Sanitatis ad Laurentium Medicum*, edito da LUIGI BELLONI. Torino: Società Italiana di Patologia, 1951. 53 pp. Ill.

Interest in Benivieni fortunately did not lapse with the death in 1936 of the chief authority, Bindo de Vecci. Benivieni, who occupies a position in relation to Morgagni similar to that of the recently described forerunners of Vesalius and Galileo, is the more remarkable in view of the lapse of time, two and a half centuries, between his work and that of Morgagni. Material on Benivieni is more plentiful than has been supposed. To his great work, *De abditis nonnullis ac mirandis morborum et sanationum causis* (Florence, 1507) and the catalogue of his library, published by de Vecci, an "Εγκώμιον Cosmi," dedicated to the young Lorenzo de Medici, and a *De peste* have recently been added. The present work makes available another example of the early writing of this physician who, more truly than most to whom the expression has been applied, stood with one foot in the Middle Ages and the other in the Renaissance.

This *De regimine sanitatis* shows, as the editor points out, the early scholastic Benivieni in contrast to the clinically inclined Benivieni of *De abditis causis*. The overriding influence of Avicenna is a notable characteristic of the work, and dependence on authority is as marked a characteristic of the *De regimine* as is its absence in the later work. Book one is divided into five chapters on the principles of the human body, digestion, bodily ills in general, and the care of infants and children. Book two covers in its eleven chapters the regimen of health with respect to air, food, drink, exercise, sleep, hunger and repletion, psychic events (accidentia animi), sexual intercourse, and the care of the aged. Within this capsule of preventive medicine from the cradle to the grave the principles of "Galenic medicine," as it was understood in the fifteenth century, are touched upon briefly but lucidly, and we also find occasional references to such ideas as macrocosm and microcosm and the separation of the impure from the pure, which were to develop into the catch-phrases of anti-Galenic medicine in the sixteenth century.

Like other "regimina," this one is of value chiefly for what it tells of its author and his environment, rather than for his specific contribution to the development of modern medicine. Since Benivieni's place in the history of the latter development is assured by *De abditis causis* the publication of his minor works which will facilitate his transformation from a mere name associated with a single work to a personality in medical history is more than welcome. The book is briefly annotated, contains an annotated introduction by Dr. Belloni, a picture of Benivieni, and reproduces six pages from the manuscript used. The format is entirely satisfactory.

ROBERT MULTHAUF

ANTONI VAN LEEUWENHOEK. *The Collected Letters.* Edited, illustrated and annotated by a committee of Dutch scientists. Vol. IV. Amsterdam: Swets and Zeitlinger, Ltd., 1952. ix + 384 pp. Ill. $15.00.

After the *Complete Works* of Christian Huygens, the Dutch pay homage to another great scientist of their "Golden Age," this time by publishing the *Collected Letters* of Antoni van Leeuwenhoek. Volume I, starting with Leeuwenhoek's letter of 1673 and his first, rather feeble steps into the microscopical world, appeared in 1939. Now volume IV, containing the letters written in 1683 and 1684, is issued in the same solid appearance as its predecessor. The volume numbers 380 pages and gives not only Leeuwenhoek's letters in the original Dutch text as well as in a modern English translation, but also an impressive list of contributors, a bibliography, a very useful biographical register (where, however, the names mentioned in Dr. Zeeman's additional annotation are missing), an extensive index and many enlightening illustrations in the back of the book.

The letters show Leeuwenhoek at his best. Here he is the self-conscious examiner, carefully testing his own methods. But when he is sure of his findings, he bravely rejects any doubt or critical investigation by his contemporaries, no matter what high position they might have. He is the typical Rationalist, who believes only what he sees with his own eyes. So he doubts whether moxa, the Chinese miracle drug against gout, is anything but the "evaporation or expression of a fruit, very much like the wool-like substance on the peach, quince and such like fruit" (p. 283). He tells the Jews, who are forbidden to eat eel on account of Deut. 14.10: "and whatsoever hath not fins and scales ye may not eat," that they can consume eel with a quiet conscience, "since this fish has scales like any other river fish (although they are very thin and small)" (p. 295). This rationalistic attitude makes Leeuwenhoek believe that the "miracle" of a child whose "entire body was covered with large fish-scales" was nothing but the result of dirt and neglect (most probably the child suffered from ichthyosis) (p. 181). On another occasion, however, it leads to the discovery of the capillaries in the villi (p. 181) whereby Leeuwenhoek proves that the "slimy substance" covering the "inside of our intestines" is no mucus, but "parts and organs indispensable to the intestines."

We see Leeuwenhoek at work in his favorite field of microbiology. In September, 1683, he wrote the well-known letter on the discovery of the bacteria in the mucus found between the teeth. From this letter we get a sample of Leeuwenhoek's methods. He examines the mucus of old men as well as of a child eight years old, of women whom he knows clean their mouths every day, and of people who never wash their mouths at all, or "never with water but every day by flushing it with aqua vitae and wine" (pp. 131-133). He repeats the same experiment over and over again, under different circumstances in order to get a strict and objective result.

We see Leeuwenhoek going out to the rabbit-breeders and observing that the young of a grey wild buck and a white tame doe are gray and show all the wild characteristics of the father. Leeuwenhoek's conclusions anticipate Mendel's pioneer experiments on the dominant factors in heredity.

These are only a few of the many different subjects which Leeuwenhoek touches upon in the years 1683-1684. Their importance is emphasized in the annotations at the bottom of each page, written by a great number of specialists in various fields. These explanations throw light on Leeuwenhoek's discoveries and on his errors, and relate his observations to the scientific knowledge of his own as well as modern times. There are also notes on economic-historical and political circumstances in Western Europe of the 17th century. When Leeuwenhoek mentions the "oriental peoples, (where) some individuals will suffer their limbs to remain stretched so long that they can never afterwards bend them again which they do in order to be considered saints by their countrymen," we get an interesting note about fakirs and their performances in the 17th century (p. 101). When Leeuwenhoek writes to "His Excellency Mr. Antoni Heinsius" about this ambassador's mission in France, we are told in what respect this mission was a failure (p. 47), and when he talks about the "leper or lazar houses" in the city of Haarlem, we learn that this city was the only place in Holland where up to 1697 an inspection of lepers took place (p. 289).

At the end of the text, there are two extensive articles, one by Dr. Zeeman on Leeuwenhoek's relation to ophthalmology and one by Miss Mendels on Leeuwenhoek's style and language. In the first one the little known fact is stated that in his examination of the structure of the eye too Leeuwenhoek made important discoveries, which, however, afterwards were forgotten and are now known under the names of the re-discoverers. Thus Dr. Zeeman points out that while the 19th century ophthalmologist Donders is considered to be the discoverer of the entoptical lens spectrum, Leeuwenhoek had seen this long before. Leeuwenhoek also observed that the lens consists of fibres which are mostly joined together to form layers. Rabl first made this fact to be accepted by the learned world.

Miss Mendels' remarks on Leeuwenhoek's style and language attempt to show that Leeuwenhoek, besides being a conscientious research worker, also was a careful writer and that he consciously modernized his spelling in the year 1683, this being the reason why, as of the letter of December 28, 1683, he changed his signature Leeuwenhoe*ck* to Leeuwenhoe*k*.

The reproduction as well as the choice of the illustrations are good and instructive. Modern drawings of the wing of Culex spec., in comparison to Leeuwenhoek's pictures of the same item, are particularly striking since they show Leeuwenhoek's accuracy and keen observation. There are clear reproductions of yolk globules from a hen's egg and of globules of saliva, showing exactly the picture Leeuwenhoek describes. The frontispiece opposite the title page gives the portrait of Leeuwenhoek, painted by 's Gravezande in 1681, which belongs to a letter in volume III. It might have been better either to include it there or to remove it to the back of volume IV in exchange for the portrait of Antoni Heinsius, one of Leeuwenhoek's main correspondents in this volume. Such an arrangement would have been the more appropriate since in the previous volumes too a picture of the principal correspondent appeared opposite the title page.

In appearance the book is as solid and well-groomed as the earlier volumes. A few errors may here be mentioned:

The bibliographical list on p. 321 is inconsistent. Of some books the year is given, of others the year is omitted. Sometimes the journals are listed with the

volume number only, at other times with the year of publication only, then again both are mentioned. Some volume numbers are give in Roman, others in Arabic numerals. Similar remarks can be made about the bibliography at the end of the book.

While in the Dutch text of Steno's biography it is said that he published, in 1669, *Discours sur l'anatomie du cerveau*, this title is quoted in Latin in the English translation. Of most Dutch book titles an English translation is given in parenthesis. Why then is it omitted after van der Sterre's *Verhandeling der genees- en heelkonstige praktijk der medicijnen*? Printing errors I found on p. 346, "nieuwe beginstelen" (beginselen), and p. 351, "remainded."

However, these remarks concern minor details and we can only be thankful to the Leeuwenhoek Committee for bringing out a work that will be of the greatest value to everyone interested in medicine or biology and their history, and which, thanks to the annotations and illustrations, is an indispensible tool and inexhaustible source for the student as well as for his professor.

JUDY MENDELS

JOHN R. BAKER. *Abraham Trembley of Geneva, Scientist and Philosopher, 1710-1784*. London: Edward Arnold & Co., 1952. (New York: St. Martin's Press, 1954). xix + 259 pp. Ill. $7.50.

This is a thoroughly delightful book, well written and interesting to read. Trembley (1710-1784) was a Scientist and Philosopher with interests not only in science but in the fields of education, politics, religion and moral philosophy. His greatest scientific contribution had to do with hydra—its activities, life history, reproduction, and particularly its powers of regeneration. At a time when the microscope was a scientific plaything, and biological laboratories were unknown, he carried on experiments which attracted a great deal of attention in the scientific and literary world. His most important discovery, that hydra has almost unlimited powers of regeneration, led him to do nearly every type of cutting and grafting experiment that has been done by his many successors in the field. The work was finally published in a monograph which has become a classic of biological literature from the point of view of method as well as material. His introduction of the experimental method into the study of morphogenesis had as far reaching an effect as any biological work of that era. In addition to writing a biography, it has been the purpose of the author "to place the discoveries of Trembley in a right perspective amid the ideas of the XVIIIth Century and to relate them to the biological knowledge of the present day." This purpose is adequately achieved.

Of particular interest to this reviewer are the three final chapters discussing Trembley's views and activities in the fields of Education, Politics, and Religion and Moral Philosophy, for this aspect of his life is not so well known. His writings on educational matters were considerable. He was a forerunner of later educationists, especially Pestalozzi, Fröbel, and Montessori. His ideas were developed out of his own experience and their importance is evidenced by the fact that many of the practices characteristic of our modern educational system are to be found in his writings.

The book is generously illustrated with reproductions of illustrations from Trembley's great monograph on the polyp, and modern photographs of the scenes of Trembley's activities. The reference list includes Trembley's books and journal articles and gives an excellent bibliography including unpublished source material, which help to make it valuable for the serious student of the history of science. It can, however, be heartily recommended to any reader, even to one with limited scientific knowledge.

J. WALTER WILSON

DONALD FLEMING. *Science and Technology in Providence 1760-1914.* An Essay in the History of Brown University in the Metropolitan Community. Brown University Papers XXVI. Providence, Rhode Island: Brown University. 1952. 54 pp. Ill. $1.25.

The present study was written for the occasion of the first independent meeting of the History of Science Society, at Brown University, April 1952, to acquaint the participants with the scientific tradition in Providence. The growth of science and technology in this city is here traced from 1760-1914 with special emphasis on Brown University and its interactions with the community. A terminal date of 1914 was chosen since it represents the close of the first age of graduate instruction at Brown, and the author did not in any case want to present critical judgments on men still living.

Dr. Fleming regards, and with justification, no historical theme more interesting or tantalizing than the development of a university. He evaluates in his study of Brown University three forces essential to the growth of such an institution: "an overriding philosophy of life which commands general assent; the recruiting by the present instructors of men with whom they feel at home; and the resolve to serve the peculiar needs of that community." In a clear style the author critically examines manuscript as well as printed sources against these basic tenets. He has succeeded in presenting concisely an integrated picture of the evolution of science instruction at Brown and its interplay with technological and community development. Of special interest is the account of the observation in Providence of the 1769 transit of Venus; of value also are the descriptions of early apparatus, books, research, student endeavours, and the colorful personages and vicissitudes involved.

Of particular interest to the historian of medicine is the story of the Brown University Medical School, the third medical college founded in New England following Harvard and Dartmouth. This ill-fated school was to live but seventeen years (1811-1828), a victim of President Francis Wayland Jr.'s policy of ordering all instructors to live "within the walls" of the institution—a rule which would have terminated all private practice, the faculty's only real source of income. Yet despite its adolescent demise, with but 87 medical degrees granted, the medical school did make a contribution. In Elisha Bartlett alone, Dr. Fleming feels, medical education at Brown was vindicated. The influence of the medical school upon the college in founding a chemical tradition never since broken off is noteworthy, and the service to Providence in stimulating and promoting good medicine was a major contribution.

The closing of the medical school was a loss not only to the university, but to the people of Providence.

Dr. Fleming is to be congratulated for providing this authoritative analysis which is well printed with clear and pertinent illustrations. His example could well be emulated in concept by others familiar with their local scientific history and heritage; too few competent surveys are available on the history of American science, particularly on a regional level.

HERBERT S. KLICKSTEIN

JOHN RITCHIE. *History of the Laboratory of the Royal College of Physicians of Edinburgh.* Edinburgh: The Royal College of Physicians, 1953. xi + 159 pp. Ill. 15 s.

For sixty three years the Royal College of Physicians of Edinburgh maintained its Laboratory as a distinguished center of medical research. Founded in 1887 to serve the Fellows and Members of the College who had problems for investigation, the Laboratory's charter placed the facilities at the disposal of any qualified investigator desirous of using them. From the beginning a most liberal attitude was taken toward the problems to be pursued, permitting studies in comparative vertebrate anatomy, zoölogy, and botany to reach completion in addition to work in pathology, physiology and biochemistry.

The broad scope of the work undertaken in the Laboratory attracted investigators of the first rank from the start. The first Superintendent, German Sims Woodhead, eminent pathologist, served only three years before accepting a call to London where the Royal Colleges, " inspired by the example of Edinburgh," had established a similar laboratory. In succeeding years the Laboratory was the center of the work of Noël Paton in physiology, W. O. Kermack in physiological chemistry, James Dawson in morbid anatomy, and A. G. McKendrick in epidemiology.

At an early date the Laboratory commenced gratuitous examination and reporting of routine specimens for the Fellows and Members of the College of Physicians and the College of Surgeons. At first this was a minor activity but eventually became a major problem, both economic and administrative, as demands upon the resources of the Laboratory increased annually, with little additional income. This trend led in 1903 to an association with the Carnegie Trustees for the Universities of Scotland, who underwrote the scientific activities of the Laboratory until its close. The universal contest between the increasing burden of routine reporting and research pursuits appears not to have diminished the contributions of the Laboratory to medical science as the years passed. Through both World Wars, though understaffed, the Laboratory contributed its services to both the military forces and the home land in admirable fashion.

The enactment and expansion of National Health Service legislation following World War II heralded the closing of the Laboratory which came to pass following withdrawal of support by the Carnegie Trustees in 1950.

John Ritchie served the Laboratory as last Superintendent in 1949-50. He has prepared a factual account of this scientific enterprise fostered by private medicine

and philanthropy, and presents it with commendable objectivity. The appended bibliography of publications originating in the Laboratory is an impressive record of pioneering British medical research. Though this volume may conclude on a strong note of regret and foreboding, " the ideals and achievements of the Laboratory . . . will survive as memories, not unfruitful."

ROBERT J. FAULCONER

SIR ARTHUR KEITH. *Menders of the Maimed.* Philadelphia, Pa.: J. B. Lippincott Company, 1952. xii + 335 pp. Ill. $10.00.

Menders of the Maimed first appeared in England in 1919. The chapters of the book were based on a series of lectures given at the Royal College of Surgeons of England in the winter 1917-1918. The book was reviewed extensively in the past and was accepted so well that copies were soon unobtainable.

There are certain books of the past, which are so important in their implications, that their absence, rarity, or inaccessibility induces duplication of effort and even loss of important information. The J. B. Lippincott Co. has rendered real service by their publication of some of the important medical classics which thus have become available to medical investigators. These classics are important, not only as historical material, but mostly as a collection of important scientific facts, which could otherwise be lost, or perhaps distorted in the subsequent literature.

The timeliness of a reappearance of the *Menders of the Maimed* becomes apparent when it is realized that, at the present time, the study of Anatomy in the medical schools is crowded out by other subjects. In the introductory chapter the author states " that there never was a time when we stood more in need of a ready knowledge of the right kind of anatomy and physiology than now . . . we must base our practice on an intimate and accurate knowledge of the structure and function of the body."

Menders of the Maimed consists of twenty chapters, each of which represents a short monograph of approximately the same length. Although each monograph is almost a self-contained unit, there is, however, an idea permeating the entire organization of the book—" The first advance in every great curative movement is made by a single mind brooding over facts gleaned by the bedside, the experimental bend, or the dissecting table."

The author states in the preface that his presentation reflects the British point of view. It becomes evident, however, almost immediately, that due recognition is given to other great names not necessarily British.

The chapters of the book are dedicated to the following subjects:

1. The Orthopaedic Principles of John Hunter; 2. John Hilton's Principles of Treatment; 3. The Principles and Practice of Hugh Owen Thomas; 4. The Introduction of Tenotomy; 5. Marshall Hall and the Bearing of His Discoveries on Orthopaedic Practice; 6. Duchenne of Boulogne as Orthopaedist; 7. Some Matters Relating to the Mechanism and Management of Muscles; 8. The Degeneration and Regeneration of Nerves; 9. The Introduction of Tendon Transplantation; 10. The

Introduction of Certain Orthopaedic Methods to British Surgery; 11. The Forerunner of the Modern American School of Orthopaedic Surgeons; 12. Movement As a Means of Treatment; 13. The Introduction of Gymnastics and Massage to Surgery; 14. The Foundation of our Knowledge of Bone Growth by Duhamel and Hunter; 15. Researches Made by Syme and by Goodsir Regarding the Growth and Repair of Bones; 16. Researches Into Bone Growth and Bone Reproduction by Ollier of Lyons and Macewen of Glasgow; 17. The Introduction of the Modern Practice of Bone Grafting; 18. Wolff's Law of Bone Transformation; 19. The Origin of Our Knowledge concerning Articular Cartilage in Health and Disease; 20. Bone-Setting—Ancient and Modern.

There are sixteen portraits and seven rare figures which materially enhance the text.

Generally speaking, the author's admirable literary style, the abundance of important factual material, and the establishment of relations of the great men to the corresponding period, make the reading of the book a sheer delight. The interpretation of certain clinical data naturally reflects the personal views of the author and the views prevalent in 1919. This is exemplified by the treatment of the subject of the flat foot deformity in the chapter on Duchenne of Boulogne, or scoliosis in the chapter on the Modern American Orthopaedic School and many others scattered through the chapters of the book.

The reviewer believes with many others, that the wealth of basic orthopaedic information in the *Menders of the Maimed* is of great value for the cultural and professional development of the orthopaedic surgeon. The historical perspective and culling from the activities of each great man, of fundamental principles valid for generations, make the book important for the medical scholar and equally important for the medical historian.

EMANUEL KAPLAN

MORRIS FISHBEIN. *1954 Medical Progress.* A Review of Medical Advances During 1953. New York-Toronto: The Blakiston Company, 1953. x + 345 pp. $5.00.

In a rapid survey of almost all the specialties, selected authorities in this book skim over the highlights of recent medical progress. The book is divided into twenty sections, each by a different specialist, each eminent in his own field.

From the historian's point of view, it is tempting to speculate what points of present day progress, so-called, will stand the test of time to endure long enough eventually to become of historical importance; what men will be long remembered; what medical techniques will long endure and what institutions will prove in the future of historic importance. We have here a book on medical progress which attempts to pick out the important advances in medicine and research as applied to practice. Certainly, men like Francis J. Braceland, Frank H. Krusen, Perrin H. Long, Charles W. Mayo, Howard A. Rusk, Paul D. White, to mention only some of the authors selected with his customary acumen by Morris Fishbein, the editor, will be remembered throughout the history of medicine as outstanding leaders in

their fields in this age of specialization. The antibiotics, as well as ACTH and Cortisone, which receive attention in practically every section of the book, are the leading, modern discoveries affecting research and practice.

Dr. Paul D. White, in his introduction to the first section on Cardiology, calls attention to the new research institute opened at Bethesda, Md., established by the U. S. Public Health Service which will house 500 patients for research purposes only. Malignant disease receives much of the attention in the various surgical specialties and yet all feel that progress only is being made in investigation rather than in any practical results thus far.

In the section on rheumatic diseases what struck me most of all was the present day return to the concept of bunching all the rheumatic diseases under one heading, a concept which held sway centuries ago in the many writings on gout. In the U. S. an arthritis and rheumatic foundation has been formed and during 1953, a national Institute of Arthritis and Metabolic Diseases to conduct and foster research. Truly historic is the extraordinary change in the morbidity mortality rates resulting from the use of sulfonamides and antibiotics as discussed in a special section by Dr. Perrin H. Long. Scarlet fever has lost its sting, erysipelas and streptococcal meningitis have almost disappeared, acute streptococcal sore throat, acute rheumatic fever, and acute mastoiditis are declining in frequency. Lobar pneumonia, "Captain of the Men of Death," has lost its ascendancy in mortality tables; "Syphilographers" per se are going out of business.

In the section on gynecology and obstetrics, Dr. Ralph A. Reis hails the newly formed American Academy of Obstetrics and Gynecology and its new journal called *Obstetrics and Gynecology* as the two most important developments in the twin specialties.

Group psychotherapy and the day hospital are emphasized by Dr. Francis J. Braceland as promising developments. I must confess that the startling ideology and jargon of the psychiatrists is still confusing me. Of especial interest to the medical historian is his praise of the three volume biography of Sigmund Freud by Ernest Jones, of which Volume I, dealing with the formative years and the great discoveries (1856-1900), which has already appeared, is acclaimed as a truly impressive piece of work, classic in style and scientific precision.

A new field of medical endeavor, stressing the concept that the handicapped can and should be salvaged, is the specialty of rehabilitation medicine so ably championed by Howard A. Rusk. Rehabilitation centers have suddenly replaced homes for incurables. No doubt this is a part of the trend of modern medicine to assume responsibility and provide medical, preventive and rehabilitative care to all people, not only the sick, but the well and incapacitated. In rehabilitation of the chronically ill, it is pointed out that the present impetus comes largely from the excellent extensive programs of rehabilitation for war veterans.

In this annual volume, a tremendous amount of modern medical practice is presented as culled from the year's literature, with occasional critical comments by the respective authors. Every practitioner can benefit from reading the book. In rapid, staccato abstracts, it points out what is going on in the various medical fields today.

SAMUEL X. RADBILL

THE BULLETIN RECENTLY RECEIVED *

A. J. Berry. *From Classical to Modern Chemistry.* New York: Cambridge University Press, 1954. xii + 251 pp. $4.75.

Benjamin Franklin. *Some Account of the Pennsylvania Hospital.* With an Introduction by I. Bernard Cohen. Baltimore: The Johns Hopkins Press, 1954. xxx + 40 pp. $3.25.

J. M. Munro Kerr, R. W. Johnstone, and Miles H. Phillips (editors). *Historical Review of British Obstetrics and Gynaecology, 1800-1950.* Edinburgh & London: E. & S. Livingstone, Ltd. (Baltimore: Williams & Wilkins Co.), 1954. viii + 420 pp. $6.75.

William J. Maloney. *George and John Armstrong of Castleton: Two Eighteenth-Century Medical Pioneers.* Edinburgh & London: E. & S. Livingstone, Ltd. (Baltimore: Williams & Wilkins Co.), 1954. xii + 116 pp. $4.00.

John Precope. *Medicine, Magic and Mythology.* London: William Heinemann, Medical Books, Ltd., 1954. 284 pp. 42 s.

Ilza Veith (editor). *Perspectives in Physiology,* An International Symposium, 1953. Washington, D. C.: American Physiological Society, 1954. xi + 177 pp. Ill. $3.00.

* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section.

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